

VERTICAL FLOOR-MOUNTED FAN COIL UNITS

RBV Engineering Guide



SO TOUGH,
WE GUARANTEE IT.

- /// RBVS
- /// RBVC
- /// RBVR

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Notes:

- Superior Rex offers RAMP, the industry's leading rating and selection program for complete unit, coil and sound selection. See your representative for more information.
- Some drawings are not shown in this engineering guide.
- All data herein is subject to change without notice.
- Drawings not for installation purposes.
- ETL Report Number J99014414-001 and 3096645CART-002.

New Fan Coils – Engineering Guide

Features and Benefits

HIGH PERFORMANCE

The Superior Rex vertical floor mounted fan coil units are designed to maximize flexibility of selection and installation.

The units are also designed to exceed the stringent quality standards of the institutional market, while remaining cost competitive in the light commercial segment of the market.

Superior Rex vertical fan coil units set the new standards for quality, flexibility, and competitive pricing.

DESIGN FLEXIBILITY

The extensive variety of standard options available on vertical floor fan coil units are where you find the versatility to fit any HVAC system designer's needs. Models RBVC and RBVS allow for additional height and width dimensions to meet architectural demand.

Options include: single wall stainless steel drain pan; MERV 7, MERV 8 and MERV 13 filters; and electric heat with single point power connection. All electric heat units are listed with ETL as an assembly and carry the cETL label.

All units comply with the latest edition of AHRI Standard 440 for testing and rating fan coil units, are certified, and display the AHRI symbol.

High efficiency motors, fan relays, disconnects and fusing mean easier coordination between mechanical and electrical trades.

Coil options allow for three or four row chilled water or DX cooling coils, and one or two row hot water or steam heating coils.

Silent solid state relays are available for fan and electric heat control in sound sensitive environments.

CONVENIENT INSTALLATION

All vertical floor fan coils are shipped completely assembled, reducing field installation time and labor. All units are thoroughly inspected and tested prior to shipment, eliminating potential problems at startup. Motor wiring is brought to a junction box on the inside of the unit end pocket, reducing electrical hook-up time.

Factory furnished valve packages assure proper fit, operation and performance.

For fast track jobs, the vertical floor fan coil is available on Quick Ship with 5, 10 or 15 day lead times.

OPTIMUM BUILDING PERFORMANCE

Concealed vertical floor fan coil chassis are built from galvanized steel. This metal surpasses the ASTM 125 hour salt spray test for corrosion and rust. Exposed cabinet models are powder coated galvanized steel.

All units, with or without electric heat, are cETL listed and labeled. All wiring is in compliance with NEC, assuring safety and quality for the owner.

Floor mounted cabinet models feature finned tubular heating elements in the reheat position, protecting room occupants from electrical shock.

Vertical floor fan coil units have a removable fan/drain pan assembly. The entire fan assembly can be easily removed from the unit and serviced on a workbench.

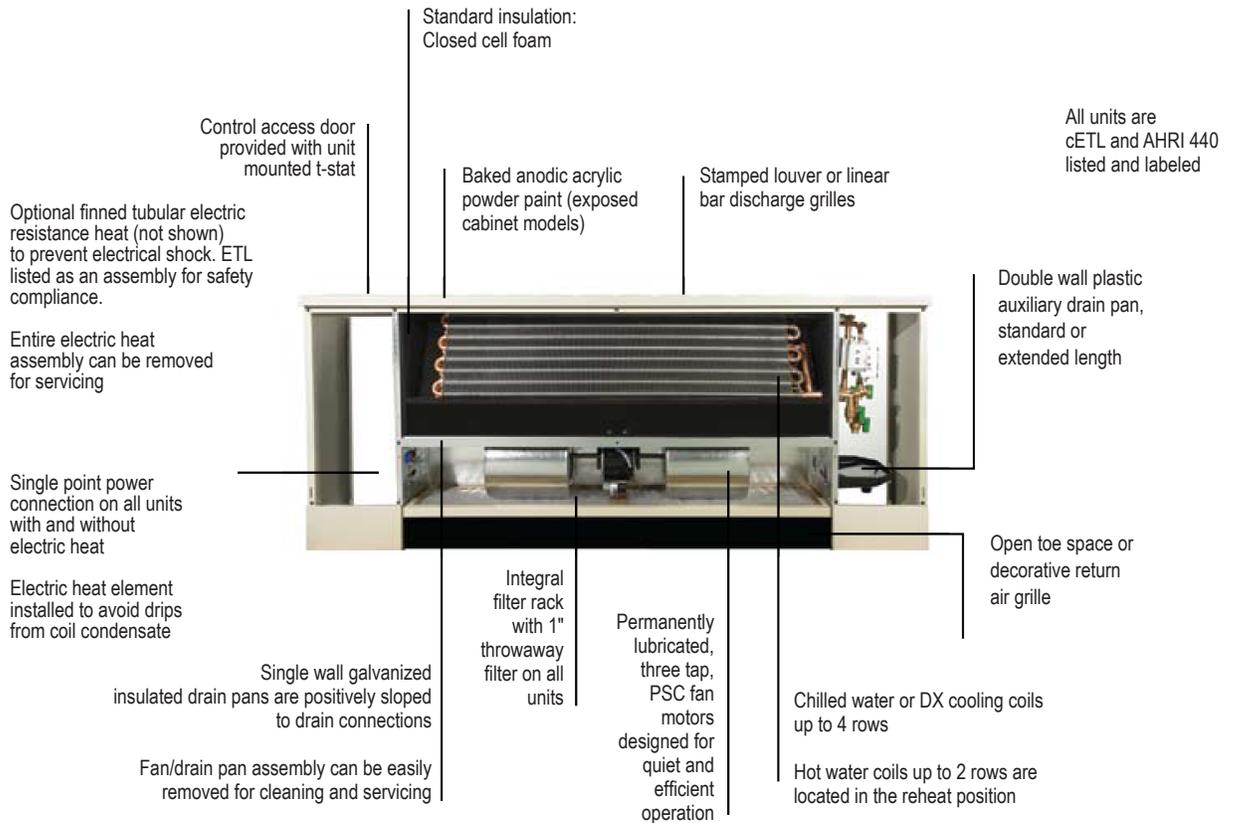
Filters are easily replaceable from the return air toe space without the need for tools or removal of the front panel.

Construction Features

Model RBVC

Vertical Flat Top Cabinet

(Photo as shown for RBVC). RBV Series fan coils have many standard and optional features which are unique to the industry. See page 7 for a complete listing.



MODEL RBVS

Vertical Slant Top Cabinet



MODEL RBVR

Vertical Concealed Floor Mount



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Construction Features

Models RBVC / RBVS / RBVR



END POCKETS

The 7.5" end pockets allow for accessibility and service of optional factory piping packages and controls. End panels are removable to allow for even greater access.

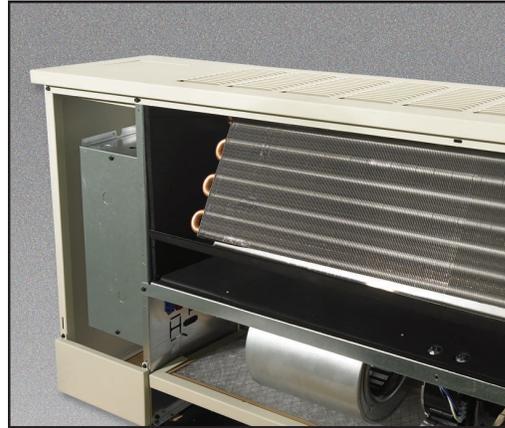


FAN DECK

The fan/drain pan assembly is easily removable for service access to motors and blowers at, or away from, the unit.

DRAIN PAN

The sloped insulated primary drain pan is available in stainless steel construction. Standard drain pan is externally insulated, single wall galvanized steel. The RBV Series fan/drain pan assembly is easily removable for cleaning.



COILS

All fan coils are available in 2 or 4 pipe configurations. The heating coil is standard in the reheat position. Heating and cooling coils are available with the same or opposite end connections. Access for cleaning on the entering air side is available when the drain pan is removed. Coils are removable for service.



FILTER

The filter is easily replaceable through the return air toe space without requiring removal of the front panel.

POWDER COATED PAINTED SURFACE

Exposed cabinet Models RBVC and RBVS, as well as supply and return air grilles and the RBVR wall recessing panel, feature a powder coat finish that resists scuffing, scratching, fading, and fingerprints.



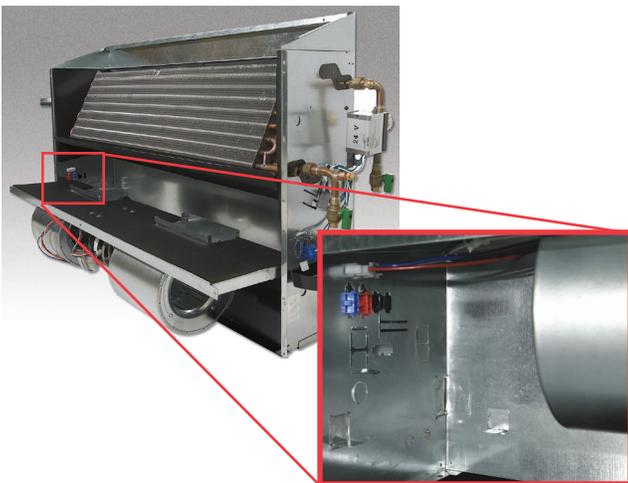
Construction Features

Models RBVC / RBVS / RBVR



CONTROL ENCLOSURE

The RBV control enclosure provides adequate space for the unit controller and fan coil relay. The fan coil relay is designed to limit diagnostic problems, while allowing for multi-voltage fan power input. The board is designed for factory installed, color coded, plug and play connections designed to ensure accurate wiring.



FAN DECK REMOVAL

RBV units allow for a single technician to service the fan/motor by keeping the fan deck to less than 44". Motors are supplied with quick connectors to allow electrical service without the need for tools.



PIPING PACKAGES

Factory installed piping packages come equipped with components specific to the project. Actuators ship with color coded plug and play connections for quick, accurate installations.



LID REMOVAL

Top panel is removable from fan coil without the need to disconnect piping or electrical wires.

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Standard And Optional Features

STANDARD FEATURES

Construction

All Units

- AHRI 440 certified and labeled
- Galvanized steel construction
- Insulation : elastomeric closed cell foam
- Integral filter rack with 1" throwaway filter

Concealed Units

- Top supply with duct collar

Exposed Units

- Top stamped louver supply grille
- Durable powder coat paint
- End pockets with removable panels
- 20 gauge exterior panel construction
- Flat top
- Sloped top

Coils

- Cooling - 3 or 4 row chilled water or DX, heat pump compatible
- Heating - 1 or 2 row hot water – reheat position
- 1/2" O D seamless copper tubes
- 0.016" tube wall thickness
- High efficiency aluminum fin surface for optimizing heat transfer, pressure drop and carryover
- Left or right hand, same or opposite end connections.
- Removable for service
- Manual air vents

Drain Pans

- Single wall, galvanized steel, externally insulated – fire retardant and antimicrobial
- Positively sloped to drain connection
- 3/4" M P T auxiliary drain pan connection
- Double wall plastic auxiliary drip pan

Fan Assemblies

- Forward curved, DWDI centrifugal type
- 115 volt, single phase, three speed PSC motors
- Quick disconnect motor connections
- Removable for service

Electrical

- cETL listed for safety compliance
- Electrical junction box for field wiring terminations
- Terminal block for field connections

Electric Heat

- Finned tubular element on all floor mounted units protects against electrical shock
- ETL listed as an assembly for safety compliance
- Integral electric heat assembly with removable elements for easy service
- Automatic reset primary and back-up secondary thermal limits
- Single point power connection

OPTIONAL FEATURES

Construction

All Units

- Manual and motorized outside air dampers
- Spare 1" throwaway filters
- 1" pleated filters (MERV 8)
- Wall boxes
- Leveling legs

Concealed Units

- Wall recessing panels

Exposed Units

- Linear bar discharge grille, powder coated
- 16 gauge front panel
- Return air louver grille
- 2" - 8" falsebacks
- Extended end pockets
- Tamper proof fasteners

Coils

- Automatic air vents
- Stainless steel coil casings

Drain Pans

- Stainless steel construction with external insulation
- Double wall plastic auxiliary drain pan - extended length
- Stainless steel auxiliary drain pan - extended length

Fan Assemblies

- 208-230 & 277 volt, 60 Hz and 220 volt, 50 Hz motors

Standard And Optional Features

Electrical

- Electronically commutated motors
- SCR fan speed controller (high speed only)
- Fan relay packages
- Silent solid state fan relays
- Toggle disconnect switch
- Condensate overflow switch (auxiliary drain pan)
- Main fusing
- Unit and remote mounted three speed fan switches
- Unit and remote mounted 3-speed fan switches (unit mounted three speed switch is located under access door on exposed and slope top vertical floor mount unit's Unit mounted three-speed switch is located within control enclosure on vertical low profile units)

Electric Heat

- Door interlocking disconnect switches
- Main fusing
- Silent relay/contactors

Piping Packages

- Factory assembled – shipped loose for field installation
- ½" and ¾", 2-way and 3-way normally closed, two position electric motorized valves
- Isolation ball valves with memory stop
- • 4 pipe with 3-way valve
- Fixed and adjustable flow control devices
- Unions and P/T ports
- Modulating control valves
- High pressure close-off actuators (½" = 50 PSIG; ¾" = 25 PSIG)

Thermostats

- Analog, digital display, or programmable
- Unit and remote mounted, with integral three speed fan switch
- 2 and 4-pipe control sequences
- Automatic and manual changeover

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Coil Data: RBV Series

Coils

Superior Rex offers hot water, chilled water, and direct expansion steam coils for specific application with all Vertical Floor fan coil units. Strict on-site inspection before, during, and after installation guarantees the highest quality and performance available.

STANDARD FEATURES

- Cooling - 3 or 4 row chilled water or DX
- Heating - 1 or 2 row hot water
- Total rows of cooling and heating coils: RBV: 4 maximum,
- ½" O.D. seamless copper tubes
- 0.016" tube wall thickness
- High efficiency aluminum fin surface for optimizing heat transfer, pressure drop and carryover
- Left or right hand, same or opposite side connections
- Manual air vents

OPTIONAL FEATURES

- Automatic air vents
- Stainless steel coil casings
- DX coils are heat pump compatible

Superior Rex offers fan coil rating and selection program for complete unit, coil and sound selection. See your representative for more information.

RBV NOMINAL COIL CONNECTION SIZES

Unit Size	Coil Type											
	Hot Water		Chilled Water		Steam		Refrigerant (DX)					
	1 Row	2 Row	3 Row	4 Row	1 Row	2 Row	2 Row		3 Row		4 Row	
							Liquid	Suction	Liquid	Suction	Liquid	Suction
02-12	5/8 [16]	5/8 [16]	5/8 [22]	5/8 [22]	5/8 [16]	5/8 [16]	3/8 [10]	5/8 [16]	3/8 [10]	5/8 [16]	3/8 [10]	5/8 [16]

Notes:

1. Connection sizes are for standard circuit coils. Consult Application Engineering for special applications
2. See submittal drawings for connection locations
3. All dimensional data is outside diameter (O.D.), measured in inches [millimeters]

RBV FACE AREA, FREE AREA AND FILTER SIZES

Unit Size	Coil Face Area	Discharge Grille Free Area	Filter Face Area	Nominal Filter Sizes
02	0.97 [.090]	0.47 [.044]	1.40 [.130]	9.25 X 21.75 X 1 [235 X 552 X 25.4]
03	1.25 [.116]	0.56 [.052]	1.65 [.154]	9.25 X 25.75 X 1 [235 X 654 X 25.4]
04	1.67 [.155]	0.66 [.061]	2.04 [.189]	9.25 X 31.75 X 1 [235 X 806 X 25.4]
06	2.36 [.219]	0.94 [.087]	2.68 [.249]	9.25 X 41.75 X 1 [235 X 1060 X 25.4]
08	2.50 [.023]	0.94 [.087]	2.79 [.260]	(2) 9.25 X 21.75 X 1 [235 X 552 X 25.4]
10	3.47 [.322]	1.31 [.122]	3.69 [.343]	(1) 9.25 X 25.75 X 1 [235 X 654 X 25.4] (1) 9.25 X 31.75 X 1 [235 X 806 X 25.4]
12	4.03 [.374]	1.50 [.139]	4.19 [.389]	(3) 9.25 X 21.75 X 1 [235 X 552 X 25.4]

Notes:

1. Face and free areas are in square feet [square meters]
2. Filter sizes are in inches [millimeters]

Coil Data: RBV Series

RBV HEATING CAPACITY

Unit Type	Unit Size	Nom CFM	1 Row			2 Row		
			QS (MBH)	GPM	WPD	QS (MBH)	GPM	WPD
RBVR	02	239	7.8	0.4	0.45	13.2	0.7	0.39
	03	330	10.8	0.6	0.80	18.6	1.0	0.61
	04	503	13.2	0.7	0.24	26.9	1.4	1.39
	06	590	15.0	0.8	0.12	32.3	1.7	0.25
	08	693	9.0	0.5	0.01	38.1	2.0	0.34
	10	900	24.4	1.3	0.10	52.4	2.7	0.69
	12	954	31.6	1.6	0.18	52.3	2.7	0.14
RBVS	02	239	7.8	0.4	0.45	13.3	0.7	0.39
	03	345	11.1	0.6	0.84	19.0	1.0	0.64
	04	489	13.0	0.7	0.24	26.5	1.4	1.36
	06	599	19.1	1.0	0.93	32.6	1.7	0.71
	08	672	21.2	1.1	1.18	37.1	1.9	0.33
	10	967	25.5	1.3	0.11	54.4	2.8	0.74
	12	1031	33.0	1.7	0.2	55.1	2.8	0.16
RBVC	02	239	7.8	0.4	0.45	13.3	0.7	0.39
	03	345	11.1	0.6	0.84	19.0	1.0	0.64
	04	489	13.0	0.7	0.24	26.5	1.4	1.36
	06	599	19.1	1.0	0.93	32.6	1.7	0.71
	08	672	21.2	1.1	1.18	37.1	1.9	0.33
	10	967	25.5	1.3	0.11	54.4	2.8	0.74
	12	1031	33.0	1.7	0.2	55.1	2.8	0.16

Note: Based on 70°F DB EAT, 180°F EWT, 40°F temperature drop, high fan speed

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Physical Data: RBV Series

RBV AHRI Standard Ratings

Model/Size	Coil		Airflow CFM (Dry Flow)	Cooling Capacity		Water		Power Input (Watts)
	Rows	FPI		QT (BTUH)	QS (BTUH)	Flow Rate (GPM)	WPD (ft-wg)	
RBVR 02	3	10	231	7210	5199	1.4	14.13	45
RBVR 03	3	10	308	7940	6199	1.6	4.1	60
RBVR 04	3	10	442	12170	9159	2.4	8.2	70
RBVR 06	3	10	558	16479	12180	3.3	6.1	80
RBVR 08	3	10	650	19500	14270	3.9	8.52	114
RBVR 10	3	10	845	27000	19319	5.4	18.01	132
RBVR 12	3	10	893	28379	20500	5.6	5.99	142

RBVS 02	3	10	233	7309	5269	1.5	14.17	45
RBVS 03	3	10	318	8029	6320	1.6	4.09	60
RBVS 04	3	10	452	12270	9270	2.4	8.2	70
RBVS 06	3	10	566	16709	12340	3.3	6.29	80
RBVS 08	3	10	628	18950	13859	3.8	8.04	114
RBVS 10	3	10	830	26590	19010	5.3	17.25	132
RBVS 12	3	10	970	30250	21930	6.1	6.81	142

RBVC 02	3	10	233	7309	5269	1.5	14.17	45
RBVC 03	3	10	318	8029	6320	1.6	4.09	60
RBVC 04	3	10	452	12270	9270	2.4	8.2	70
RBVC 06	3	10	566	16709	12340	3.3	6.29	80
RBVC 08	3	10	628	18950	13859	3.8	8.04	114
RBVC 10	3	10	830	26590	19010	5.3	17.25	132
RBVC 12	3	10	970	30250	21930	6.1	6.81	142

Note: Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise, high fan speed. Motor type is PSC and motor voltage is 115/1/60. Airflow under dry coil conditions. Models RBVC and RBVS tested at 0.0" external static pressure. Model RBVR tested at 0.05" external static pressure.

RBV Unit Weight Data

Component		Unit Size						
		02	03	04	06	08	10	12
RBVR Base Unit		36 [16]	45 [20]	55 [25]	62 [28]	66 [30]	92 [42]	105 [48]
RBVC Base Unit		66 [30]	74 [34]	87 [39]	96 [44]	102 [46]	131 [59]	149 [68]
RBVS Base Unit		68 [31]	76 [34]	89 [40]	99 [45]	102 [46]	135 [61]	153 [69]
Total Coil Rows	1 Row - Dry	11 [5]	12 [5]	14 [6]	18 [8]	19 [9]	23 [10]	26 [12]
	1 Row - Wet	14 [6]	15 [7]	20 [9]	24 [11]	25 [11]	32 [15]	37 [17]
	2 Row - Dry	14 [6]	15 [7]	19 [9]	22 [10]	24 [11]	30 [14]	33 [15]
	2 Row - Wet	19 [9]	20 [9]	25 [11]	31 [14]	32 [15]	41 [19]	47 [21]
	3 Row - Dry	18 [8]	20 [9]	23 [10]	29 [13]	30 [14]	37 [17]	43 [20]
	3 Row - Wet	23 [10]	25 [11]	32 [15]	39 [18]	41 [19]	52 [24]	61 [28]
	4 Row - Dry	22 [10]	25 [11]	30 [14]	36 [16]	39 [18]	47 [21]	54 [24]
	4 Row - Wet	30 [14]	32 [15]	41 [19]	50 [23]	52 [24]	65 [29]	77 [35]

Note: Unit weight data is in pounds [kilograms]

Electric Heat

STANDARD FEATURES

- ETL listed as an assembly for safety compliance
- Single point power connection
- Mounted in preheat position
- Automatic reset primary and back-up secondary thermal limits
- Internal wiring rated at 105°C
- Integral electric heat assembly with removable element for easy service



OPTIONAL FEATURES

- Solid state silent relay
- Door interlocking disconnect switch
- Main fusing

ELECTRICAL CALCULATIONS INFORMATION

- Contact Superior Rex
- Non-Fused Door Interlock Disconnect Switch shall be sized according to MCA
- Fused Door Interlock Disconnect Switch and Main Fusing shall be sized according to MOP

USEFUL FORMULAS

$$kW^* = \frac{CFM \times \Delta T \times 1.085^{**}}{3413}$$

$$1\emptyset \text{ AMPs} = \frac{kW \times 1000}{\text{Volts}}$$

$$* 1kW = 3413 \text{ BTU/H}$$

** Capacity at sea level

Altitude Considerations:

Reduce by 0.034 for each 1000 ft. of altitude above sea level.

Example: 5000 ft./1000 ft. = 5

$$5 \times 0.034 = 0.17$$

$$1.085 - 0.17 = 0.915$$

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Electric Heat

RBV Electric Heat Selection Chart (AMPS)

Unit Size	MBH	3.4	5.1	6.8	10.2	13.7	17.1	20.5
	KW	1.0	1.5	2.0	3.0	4.0	5.0	6.0
	Volts	AMPS						
02	115	8.3						
	208	4.8						
	240	4.2						
	277	3.6						
03	115	8.3	12.5					
	208	4.8	7.2					
	240	4.2	6.3					
	277	3.6	5.4					
04	115	8.3	12.5	16.7				
	208	4.8	7.2	9.6				
	240	4.2	6.3	8.3				
	277	3.6	5.4	7.2				
06	115	8.3	12.5	16.7	25.0			
	208	4.8	7.2	9.6	14.4			
	240	4.2	6.3	8.3	12.5			
	277	3.6	5.4	7.2	10.8			
08	115	8.3	12.5	16.7	25.0			
	208	4.8	7.2	9.6	14.4	19.2		
	240	4.2	6.3	8.3	12.5	16.7		
	277	3.6	5.4	7.2	10.8	14.4		
10	115	8.3	12.5	16.7	25.0			
	208	4.8	7.2	9.6	14.4	19.2	24.0	
	240	4.2	6.3	8.3	12.5	16.7	20.8	
	277	3.6	5.4	7.2	10.8	14.4	18.1	
12	115	8.3	12.5	16.7	25.0			
	208	4.8	7.2	9.6	14.4	19.2	24.0	28.9
	240	4.2	6.3	8.3	12.5	16.7	20.8	25.0
	277	3.6	5.4	7.2	10.8	14.4	18.1	21.7

- Notes:
1. Shaded areas of the electric heat selection chart indicate kW and voltage options not available
 2. Available voltages are single phase, 60 hertz
 3. Size heater for Leaving Air Temperature (LAT) less than 104°F
 4. Silent, solid state heater relay is available for heater currents less than 18 amps
 5. Ask your representative about continuously modulating electric heat using SSR and special control options

Fan Performance: RBV Series

Unit Data						3 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	231	(1) 1/50	0.40	45	58.3/55.6	5.1	4.2	45/55	1.0	10.5
	03	308	(1) 1/20	0.60	60	66.1/59.8	3.0	3.0	45/55	0.6	0.72
	04	442	(1) 1/20	0.75	70	59.9/56.8	8.2	7.3	45/55	1.6	4.66
	06	558	(1) 1/20	0.75	80	58.9/56.2	11.3	9.8	45/55	2.3	3.3
	08	650	(1) 1/10	1.10	114	58.9/56.1	13.3	11.4	45/55	2.6	4.53
	10	845	(2) 1/20	1.50	132	58.0/55.4	19.0	15.7	45/55	3.8	9.95
	12	893	(2) 1/20	1.50	142	58.1/55.7	19.4	16.5	45/55	3.9	3.00
RBVS	02	233	(1) 1/50	0.40	45	58.4/55.7	5.1	4.2	45/55	1.0	10.50
	03	318	(1) 1/20	0.60	60	66.3/59.9	3.0	3.0	45/55	0.6	0.74
	04	452	(1) 1/20	0.75	70	60.0/56.8	8.4	7.4	45/55	1.7	4.85
	06	566	(1) 1/20	0.75	80	59.0/56.3	11.3	9.9	45/55	2.3	3.30
	08	628	(1) 1/10	1.10	114	58.8/56.1	13.0	11.1	45/55	2.6	4.35
	10	830	(2) 1/20	1.50	132	57.9/55.3	19.0	15.5	45/55	3.8	9.95
	12	970	(2) 1/20	1.50	142	58.5/55.9	20.5	17.5	45/55	4.1	3.30
RBVC	02	233	(1) 1/50	0.40	45	58.4/55.7	5.1	4.2	45/55	1.0	10.50
	03	318	(1) 1/20	0.60	60	66.3/59.9	3.0	3.0	45/55	0.6	0.74
	04	452	(1) 1/20	0.75	70	60.0/56.8	8.4	7.4	45/55	1.7	4.85
	06	566	(1) 1/20	0.75	80	59.0/56.3	11.3	9.9	45/55	2.3	3.30
	08	628	(1) 1/10	1.10	114	58.8/56.1	13.0	11.1	45/55	2.6	4.35
	10	830	(2) 1/20	1.50	132	57.9/55.3	19.0	15.5	45/55	3.8	9.95
	12	970	(2) 1/20	1.50	142	58.5/55.9	20.5	17.5	45/55	4.1	3.30

Note: Based on 75°F DB EAT, 63°F WB, and 3 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

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Fan Performance Data: RBV Series

Unit Data						4 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	62.9/58.7	3.0	3.0	45/55	0.6	0.91
	03	296	(1) 1/20	0.60	60	55.4/54.2	7.6	6.3	45/55	1.5	5.04
	04	421	(1) 1/20	0.75	70	55.0/53.7	11.4	9.2	45/55	2.3	9.99
	06	539	(1) 1/20	0.75	80	55.3/54.2	13.8	11.6	45/55	2.8	2.87
	08	614	(1) 1/10	1.10	114	55.2/54.0	16.1	13.2	45/55	3.2	3.83
	10	815	(2) 1/20	1.50	132	54.1/53.0	23.6	18.7	45/55	4.7	8.89
	12	842	(2) 1/20	1.50	142	52.7/51.8	26.9	20.5	45/55	5.4	13.28
RBVS/RBVC	02	229	(1) 1/50	0.40	45	62.9/58.7	3.0	3.0	45/55	1.0	10.50
	03	312	(1) 1/20	0.60	60	55.5/54.3	7.9	6.6	45/55	0.6	0.74
	04	431	(1) 1/20	0.75	70	55.1/53.8	11.6	9.4	45/55	1.7	4.85
	06	549	(1) 1/20	0.75	80	55.5/54.3	13.9	11.7	45/55	2.3	3.30
	08	603	(1) 1/10	1.10	114	55.0/53.9	16.0	13.2	45/55	2.6	4.35
	10	805	(2) 1/20	1.50	132	54.0/52.9	23.4	18.5	45/55	3.8	9.95
	12	934	(2) 1/20	1.50	142	53.2/52.2	28.8	22.3	45/55	4.1	3.30

Note: Based on 75°F DB EAT, 63°F WB, and 4 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

Unit Data						3 Row Chilled Water Coil					1 Row Hot Water Coil			
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)	LAT DB/WB (°F)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	58.2/55.6	5.0	4.2	1.0	10.50	100.7	7.5	0.4	0.44
	03	296	(1) 1/20	0.60	60	65.9/59.8	3.0	3.0	0.6	0.70	101.6	10.1	0.5	0.71
	04	421	(1) 1/20	0.75	70	59.7/56.7	8.0	7.0	1.6	4.48	95.6	11.8	0.6	0.21
	06	539	(1) 1/20	0.75	80	58.8/56.1	11.0	9.5	2.2	3.17	94	14.0	0.7	0.11
	08	614	(1) 1/10	1.10	114	58.8/56.0	12.7	11.0	2.5	4.17	83.1	8.7	0.4	0.01
	10	815	(2) 1/20	1.50	132	57.8/55.2	18.8	15.4	3.8	9.96	95.6	22.6	1.2	0.09
	12	842	(2) 1/20	1.50	142	58.0/55.6	18.5	15.7	3.7	2.70	101.8	29.0	1.5	0.16
RBVS/RBVC	02	229	(1) 1/50	0.40	45	58.2/55.6	5.0	4.1	1.0	10.50	100.7	7.6	0.4	0.45
	03	312	(1) 1/20	0.60	60	66.2/59.9	3.0	3.0	0.6	0.72	100.7	10.4	0.5	0.75
	04	431	(1) 1/20	0.75	70	59.8/56.8	8.1	7.1	1.6	4.48	95.7	12.0	0.6	0.21
	06	549	(1) 1/20	0.75	80	59/56.2	11.1	9.6	2.2	3.17	93.9	14.2	0.7	0.11
	08	603	(1) 1/10	1.10	114	58.6/56.0	12.6	10.8	2.5	4.17	83.3	8.7	0.4	0.01
	10	805	(2) 1/20	1.50	132	57.8/55.2	18.4	15.1	3.6	9.41	95.7	22.4	1.2	0.08
	12	934	(2) 1/20	1.50	142	58.3/55.8	28.8	17.0	4.0	3.15	100.4	30.8	1.6	0.18

Note: Based on 70°F EAT, 180°F EWT, 40°F temperature drop. Cooling coil data based on 75°F DB EAT, 63°F WB, 45°F EWT, 55°F LWT. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

Fan Performance Data: RBV Series

Unit Data						3 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	231	(1) 1/50	0.40	45	59.0/56.3	6.1	4.8	45/55	1.2	12.92
	03	308	(1) 1/20	0.60	60	61.2/58.2	6.5	5.7	45/55	1.3	2.96
	04	442	(1) 1/20	0.75	70	60.7/57.6	10.1	8.4	45/55	2.0	6.37
	06	558	(1) 1/20	0.75	80	59.6/56.9	13.8	11.2	45/55	2.8	4.67
	08	650	(1) 1/10	1.10	114	59.6/56.8	16.3	13.1	45/55	3.3	6.44
	10	845	(2) 1/20	1.50	132	58.8/56.1	22.8	17.8	45/55	4.5	13.01
	12	893	(2) 1/20	1.50	142	58.8/56.3	23.7	18.8	45/55	4.7	4.30
RBVS	02	233	(1) 1/50	0.40	45	59.1/56.4	6.1	4.8	45/55	1.2	12.92
	03	318	(1) 1/20	0.60	60	61.3/58.2	6.7	5.8	45/55	1.3	3.12
	04	452	(1) 1/20	0.75	70	60.8/57.6	10.3	8.5	45/55	2.0	6.56
	06	566	(1) 1/20	0.75	80	59.7/57	13.9	11.3	45/55	2.8	4.67
	08	628	(1) 1/10	1.10	114	59.5/56.8	15.8	12.7	45/55	3.1	6.05
	10	830	(2) 1/20	1.50	132	58.6/56.0	22.7	17.6	45/55	4.5	13.01
	12	970	(2) 1/20	1.50	142	59.1/56.5	25.2	20.1	45/55	5.0	4.84
RBVC	02	233	(1) 1/50	0.40	45	59.1/56.4	6.1	4.8	45/55	1.2	12.92
	03	318	(1) 1/20	0.60	60	61.3/58.2	6.7	5.8	45/55	1.3	3.12
	04	452	(1) 1/20	0.75	70	60.8/57.6	10.3	8.5	45/55	2.0	6.56
	06	566	(1) 1/20	0.75	80	59.7/57	13.9	11.3	45/55	2.8	4.67
	08	628	(1) 1/10	1.10	114	59.5/56.8	15.8	12.7	45/55	3.1	6.05
	10	830	(2) 1/20	1.50	132	58.6/56.0	22.7	17.6	45/55	4.5	13.01
	12	970	(2) 1/20	1.50	142	59.1/56.5	25.2	20.1	45/55	5.0	4.84

Note: Based on 78°F DB EAT, 65°F WB, and 3 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

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Fan Performance Data: RBV Series

Unit Data						4 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	56.8/55.6	6.5	5.3	45/55	1.3	3.71
	03	296	(1) 1/20	0.60	60	55.7/54.6	9.3	7.2	45/55	1.8	6.80
	04	421	(1) 1/20	0.75	70	55.3/54.1	13.7	10.4	45/55	2.7	12.31
	06	539	(1) 1/20	0.75	80	55.6/54.5	16.9	13.2	45/55	3.3	3.99
	08	614	(1) 1/10	1.10	114	55.3/54.3	19.7	15.2	45/55	3.9	5.48
	10	815	(2) 1/20	1.50	132	54.3/53.3	28.3	21.2	45/55	5.7	11.89
	12	842	(2) 1/20	1.50	142	53.0/52.1	31.8	23.1	45/55	6.4	17.45
RBVS/ RBVC	02	229	(1) 1/50	0.40	45	56.8/55.6	6.5	5.3	45/55	1.3	3.70
	03	312	(1) 1/20	0.60	60	55.9/54.7	9.6	7.6	45/55	1.9	7.23
	04	431	(1) 1/20	0.75	70	55.5/54.2	13.9	10.6	45/55	2.8	12.44
	06	549	(1) 1/20	0.75	80	55.6/54.5	17.2	13.5	45/55	3.4	4.16
	08	603	(1) 1/10	1.10	114	55.3/54.2	19.4	15.0	45/55	3.8	5.29
	10	805	(2) 1/20	1.50	132	54.3/53.3	27.9	20.9	45/55	5.5	11.46
	12	934	(2) 1/20	1.50	142	53.5/52.5	34.3	25.1	45/55	6.9	20.05

Note: Based on 78°F DB EAT, 65°F WB, and 4 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

Unit Data						3 Row Chilled Water Coil					1 Row Hot Water Coil			
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)	LAT DB/WB (°F)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	58.9/56.2	6.1	4.8	1.2	12.9	100.7	7.5	0.4	0.44
	03	296	(1) 1/20	0.60	60	61.1/58.1	6.3	5.5	1.3	2.8	101.6	10.1	0.5	0.71
	04	421	(1) 1/20	0.75	70	60.5/57.5	9.7	8.1	1.9	6.0	95.6	11.8	0.6	0.21
	06	539	(1) 1/20	0.75	80	59.6/56.9	13.3	10.9	2.6	4.3	94.0	14.0	0.7	0.11
	08	614	(1) 1/10	1.10	114	59.4/56.7	15.7	12.5	3.1	6.1	83.1	8.7	0.4	0.01
	10	815	(2) 1/20	1.50	132	58.5/55.9	22.5	17.4	4.5	13.0	95.6	22.6	1.2	0.09
	12	842	(2) 1/20	1.50	142	58.6/56.2	22.6	17.9	4.5	4.0	101.8	29.0	1.5	0.16
RBVS/ RBVC	02	229	(1) 1/50	0.40	45	59/56.3	6.1	4.8	1.2	12.9	100.7	7.6	0.4	0.45
	03	312	(1) 1/20	0.60	60	61.3/58.2	6.5	5.7	1.3	3.0	100.7	10.4	0.5	0.75
	04	431	(1) 1/20	0.75	70	60.5/57.5	10.0	8.3	2.0	6.4	95.7	12.0	0.6	0.21
	06	549	(1) 1/20	0.75	80	59.6/56.9	13.6	11.1	2.7	4.5	93.9	14.2	0.7	0.11
	08	603	(1) 1/10	1.10	114	59.3/56.6	15.4	12.3	3.1	5.9	83.3	8.7	0.4	0.01
	10	805	(2) 1/20	1.50	132	58.5/55.9	22.2	17.2	4.4	12.3	95.7	22.4	1.2	0.08
	12	934	(2) 1/20	1.50	142	59/56.5	24.3	19.4	4.8	4.5	100.4	30.8	1.6	0.18

Note: Based on 70°F EAT, 180°F EWT, 40°F temperature drop. Cooling coil data based on 78°F DB EAT, 65°F WB, 45°F EWT, 55°F LWT. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

Fan Performance Data: RBV Series

Unit Data						3 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/ LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	231	(1) 1/50	0.40	45	57.7/55.5	4.4	3.6	45/55	0.9	8.83
	03	308	(1) 1/20	0.60	60	64.4/59.3	2.5	2.5	45/55	0.5	0.54
	04	442	(1) 1/20	0.75	70	59.2/56.6	7.1	6.2	45/55	1.4	3.74
	06	558	(1) 1/20	0.75	80	58.5/56.2	9.5	8.2	45/55	1.9	2.42
	08	650	(1) 1/10	1.10	114	58.4/56	11.4	9.7	45/55	2.3	3.48
	10	845	(2) 1/20	1.50	132	57.3/55.1	17.0	13.6	45/55	3.4	8.36
	12	893	(2) 1/20	1.50	142	57.7/55.6	16.7	14.0	45/55	3.3	2.28
RBVS	02	233	(1) 1/50	0.40	45	57.7/55.5	4.4	3.6	45/55	0.9	8.83
	03	318	(1) 1/20	0.60	60	64.6/59.3	2.6	2.6	45/55	0.5	0.56
	04	452	(1) 1/20	0.75	70	59.3/56.7	7.1	6.2	45/55	1.4	3.74
	06	566	(1) 1/20	0.75	80	58.6/56.3	9.5	8.2	45/55	1.9	2.42
	08	628	(1) 1/10	1.10	114	58.2/55.9	11.3	9.5	45/55	2.3	3.48
	10	830	(2) 1/20	1.50	132	57.3/55.1	16.7	13.4	45/55	3.3	8.10
	12	970	(2) 1/20	1.50	142	57.9/55.7	17.8	14.9	45/55	3.6	2.56
RBVC	02	233	(1) 1/50	0.40	45	57.7/55.5	4.4	3.6	45/55	0.9	8.83
	03	318	(1) 1/20	0.60	60	64.6/59.3	2.6	2.6	45/55	0.5	0.56
	04	452	(1) 1/20	0.75	70	59.3/56.7	7.1	6.2	45/55	1.4	3.74
	06	566	(1) 1/20	0.75	80	58.6/56.3	9.5	8.2	45/55	1.9	2.42
	08	628	(1) 1/10	1.10	114	58.2/55.9	11.3	9.5	45/55	2.3	3.48
	10	830	(2) 1/20	1.50	132	57.3/55.1	16.7	13.4	45/55	3.3	8.10
	12	970	(2) 1/20	1.50	142	57.9/55.7	17.8	14.9	45/55	3.6	2.56

Note: Based on 72°F DB EAT, 62°F WB, and 3 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

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Fan Performance Data: RBV Series

Unit Data						4 Row Chilled Water Coil					
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	EWT/LWT (°F)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	61.1/58.2	2.5	2.6	45/55	0.5	0.70
	03	296	(1) 1/20	0.60	60	55.4/54.2	6.5	5.4	45/55	1.3	3.96
	04	421	(1) 1/20	0.75	70	54.7/53.7	10.1	8.0	45/55	2.0	8.52
	06	539	(1) 1/20	0.75	80	55.4/54.5	11.8	9.8	45/55	2.3	2.14
	08	614	(1) 1/10	1.10	114	55.1/54.1	14.0	11.4	45/55	2.8	3.00
	10	815	(2) 1/20	1.50	132	53.9/53.0	21.0	16.2	45/55	4.2	7.35
	12	842	(2) 1/20	1.50	142	52.6/51.9	24.2	17.9	45/55	4.9	11.27
RBVS/ RBVC	02	229	(1) 1/50	0.40	45	61.7/58.3	2.6	2.5	45/55	0.5	0.70
	03	312	(1) 1/20	0.60	60	55.6/54.5	6.8	5.6	45/55	1.3	4.17
	04	431	(1) 1/20	0.75	70	54.9/53.8	10.2	8.1	45/55	2.0	8.52
	06	549	(1) 1/20	0.75	80	55.5/54.6	11.8	9.9	45/55	2.3	2.14
	08	603	(1) 1/10	1.10	114	55.0/54.1	13.8	11.2	45/55	2.8	3.00
	10	805	(2) 1/20	1.50	132	53.8/52.9	20.9	16.1	45/55	4.2	7.35
	12	934	(2) 1/20	1.50	142	53/52.2	26.1	19.5	45/55	5.2	12.72

Note: Based on 72°F DB EAT, 62°F WB, and 4 row cooling coil. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.

Unit Data						3 Row Chilled Water Coil					1 Row Hot Water Coil			
Unit Type	Unit Size	Airflow (CFM)	Motor (HP)	Fan AMPS (FLA)	Fan Watts	LAT DB/WB (°F)	Total Capacity (MBH)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)	LAT DB/WB (°F)	Sensible Capacity (MBH)	Fluid Flow (GPM)	Fluid PD (Ft.)
RBVR	02	227	(1) 1/50	0.40	45	57.6/55.4	4.4	3.6	0.9	8.84	100.7	7.5	0.4	0.44
	03	296	(1) 1/20	0.60	60	64.2/59.2	2.5	2.5	0.5	0.54	101.6	10.1	0.5	0.71
	04	421	(1) 1/20	0.75	70	59.1/56.6	6.8	5.9	1.3	3.38	95.6	11.8	0.6	0.21
	06	539	(1) 1/20	0.75	80	58.3/56.1	9.4	8	1.9	2.42	94.0	14.0	0.7	0.11
	08	614	(1) 1/10	1.10	114	58.1/55.9	11	9.3	2.2	3.31	83.1	8.7	0.4	0.01
	10	815	(2) 1/20	1.50	132	57.2/55.1	16.4	13.2	3.3	7.84	95.6	22.6	1.2	0.09
	12	842	(2) 1/20	1.50	142	57.6/55.6	15.8	13.3	3.1	2.02	101.8	29.0	1.5	0.16
RBVS/ RBVC	02	229	(1) 1/50	0.40	45	57.6/55.5	4.3	3.6	0.9	10.5	100.7	7.6	0.4	0.45
	03	312	(1) 1/20	0.60	60	64.5/59.3	2.5	2.5	0.5	0.54	100.7	10.4	0.5	0.75
	04	431	(1) 1/20	0.75	70	59.1/56.6	6.9	6.1	1.4	3.56	95.7	12.0	0.6	0.21
	06	549	(1) 1/20	0.75	80	58.4/56.2	9.4	8.1	1.9	2.42	93.9	14.2	0.7	0.11
	08	603	(1) 1/10	1.10	114	58.2/55.9	10.8	9.1	2.1	3.15	83.3	8.7	0.4	0.01
	10	805	(2) 1/20	1.50	132	57.1/55.0	16.4	13.1	3.3	7.84	95.7	22.4	1.2	0.08
	12	934	(2) 1/20	1.50	142	57.8/55.7	17.3	14.5	3.5	2.42	100.4	30.8	1.6	0.18

Note: Based on 70°F EAT, 180°F EWT, 40°F temperature drop. Cooling coil data based on 72°F DB EAT, 62°F WB, 45°F EWT, 55°F LWT. All selections made at High speed, .05" ESP, 115/1/60 motor, Concealed style of unit, Altitude of 0'. Fan watts shown at operating conditions. FLA based on motor nameplate.



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Motor And Fan Data

RBV PSC Motor And Fan Data

Unit Size	Fan Speed	Motor H.P. (QTY)	# Of Fan	115 Volts	208-230 Volts	277 Volts	
				WATTS	AMPS	AMPS	AMPS
02	High	(1) 1/50	1	45	0.40	0.27	0.21
	Medium			35			
	Low			28			
03	High	(1) 1/20	1	60	0.60	0.40	0.31
	Medium			48			
	Low			43			
04	High	(1) 1/20	2	70	0.75	0.39	0.35
	Medium			61			
	Low			58			
06	High	(1) 1/20	2	80	0.75	0.39	0.35
	Medium			74			
	Low			61			
08	High	(1) 1/10	2	114	1.10	0.51	0.46
	Medium			81			
	Low			71			
10	High	(2) 1/20	4	132	1.50	0.78	0.70
	Medium			114			
	Low			107			
12	High	(2) 1/20	4	142	1.50	0.78	0.70
	Medium			126			
	Low			114			

Notes:

1. RBVC 3-row coil, no EH, no toe kick, standard throw away panel filter. Fan watts shown at operating conditions.
2. Data was taken without ductwork
3. Unit size 04, 06, 08, 10 and 12 data generated at 115v, 230v and 277v
4. Unit size 02 & 03 data generated with 115v, 240v to 120v transformer (230v line voltage) and 277v to 120v transformer (277v line voltage)
5. FLA based on motor nameplate

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Motor And Fan Data

RBV ECM Motor And Fan Data

VERTICAL CONCEALED FLOOR MOUNT

Unit Size	Fan Speed	Motor H.P. (QTY)	# Of Fan	WATTS	115 Volts		208-230 Volts		277 Volts	
					FLA	3-Phase Neutral	FLA	3-Phase Neutral	FLA	3-Phase Neutral
02	High	(1) 1/25	1	34	0.7	1.0	0.5	0.8	0.5	0.8
03	High	(1) 1/25	1	48	1.0	1.5	0.8	1.2	0.7	1.0
04	High	(1) 1/25	2	55	1.2	1.7	0.9	1.3	0.9	1.3
06	High	(1) 1/25	2	63	1.4	2.0	1.1	1.6	1.1	1.6
08	High	(1) 1/25	2	83	1.7	2.5	1.3	1.9	1.2	1.7
10	High	(2) 1/25	4	106	2.2	3.2	1.6	2.4	1.6	2.4
12	High	(2) 1/25	4	120	3.0	4.4	2.4	3.4	2.2	3.2

VERTICAL FLAT TOP — SLANT TOP CABINET

Unit Size	Fan Speed	Motor H.P. (QTY)	# Of Fan	WATTS	115 Volts		208-230 Volts		277 Volts	
					FLA	3-Phase Neutral	FLA	3-Phase Neutral	FLA	3-Phase Neutral
02	High	(1) 1/25	1	38	0.7	1.0	0.5	0.8	0.5	0.8
03	High	(1) 1/25	1	48	1.0	1.5	0.7	1.0	0.7	1.0
04	High	(1) 1/25	2	53	1.1	1.6	0.9	1.3	0.9	1.3
06	High	(1) 1/25	2	66	1.4	2.0	1.1	1.6	1.0	1.5
08	High	(1) 1/25	2	93	1.8	2.6	1.3	1.9	1.3	1.9
10	High	(2) 1/25	4	115	2.8	4.0	2.2	3.2	2.2	3.2
12	High	(2) 1/25	4	120	3.0	4.4	2.2	3.2	2.2	3.2

Notes:

1. Exposed, 3-row coil, no EH, no toe kick, standard throw away panel filter
2. Watts as shown are for .05" ESP, 3 row coil, 115/1/60, 12 FPI, and throwaway filters
3. Motor HP as noted is a nominal rating
4. Data as supplied is for reference only. For project specific operational points see selection tool report out

Sound Data

RBV Sound Data

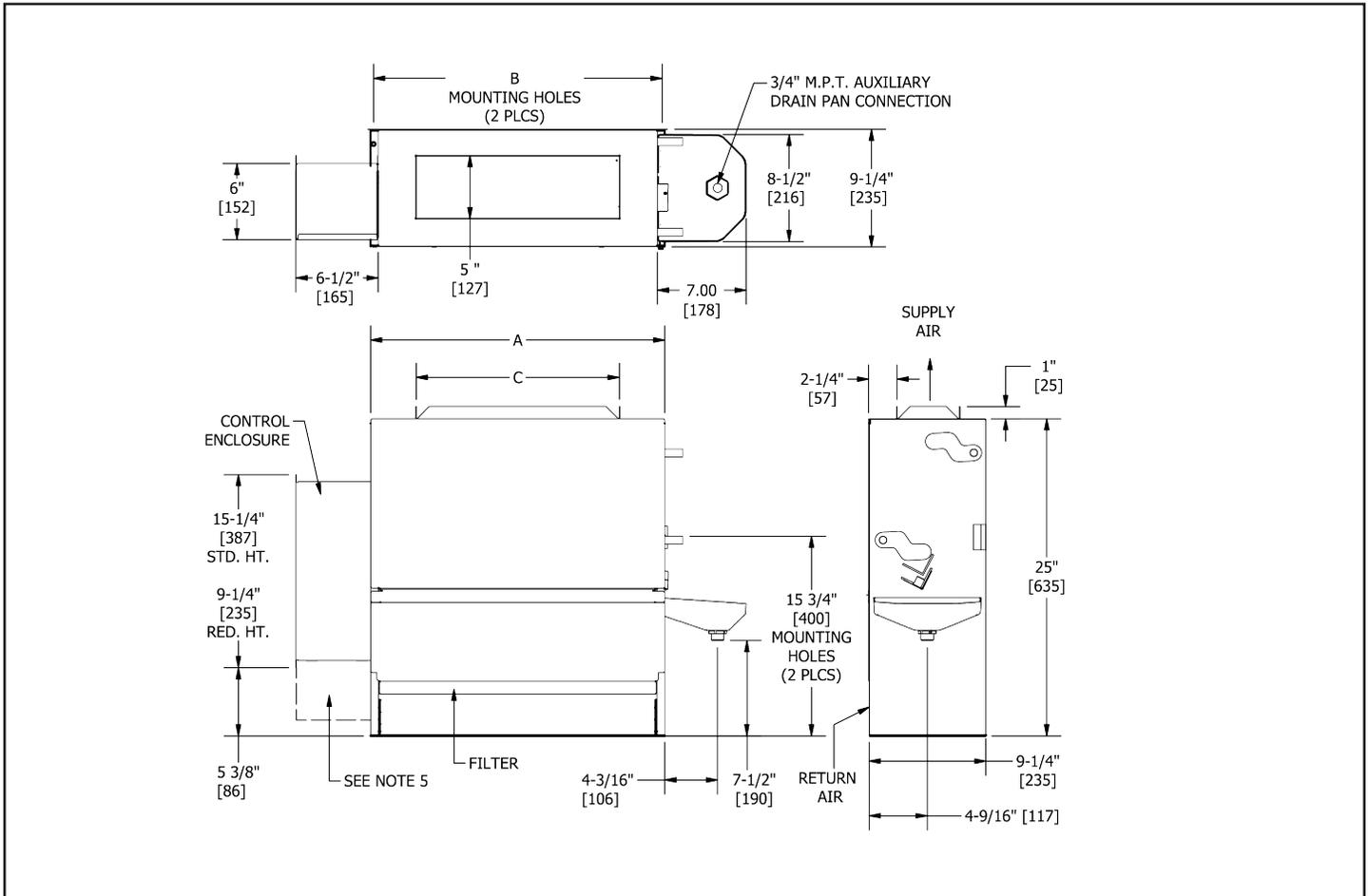
Unit Size	Fan Speed	SCFM	Total Sound Power Level						
			Octave Band / Center Frequency (HZ)						
			2/125	3/250	4/500	5/1000	6/2000	7/4000	8/8000
02	High	233	60	65	60	55	50	47	39
	Medium	190	51	54	47	44	37	27	30
	Low	149	44	46	32	29	22	26	28
03	High	321	60	62	56	54	50	45	38
	Medium	280	57	57	52	49	45	38	32
	Low	246	51	53	47	44	38	29	30
04	High	454	61	64	63	57	50	48	40
	Medium	420	59	60	60	52	47	40	34
	Low	334	51	56	49	42	34	28	30
06	High	570	62	64	68	57	48	45	38
	Medium	492	58	60	65	52	44	39	32
	Low	362	51	54	49	40	32	27	30
08	High	633	68	68	65	61	55	51	45
	Medium	549	63	62	63	56	51	44	38
	Low	436	59	57	56	48	40	33	31
10	High	836	65	66	70	60	53	51	40
	Medium	792	61	63	68	59	52	45	38
	Low	697	58	59	65	53	45	41	33
12	High	978	65	66	66	59	52	47	39
	Medium	888	64	65	66	57	51	45	37
	Low	697	57	57	61	49	41	34	31

- Notes:
1. Sound data tested in accordance with AHRI-350-2008
 2. Sound levels expressed in decibels, dB RE: 1 x 10-12 watts
 3. Total sound power level data based on exposed cabinet model with fan CFM at corresponding motor tap with 115/1/60 volt motor, 3 row coil, 1" throwaway filter, 0.0" external static pressure and standard rated internal pressure losses

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Dimensional Data: RBV Series

Model RBVR Vertical Concealed Floor Mount



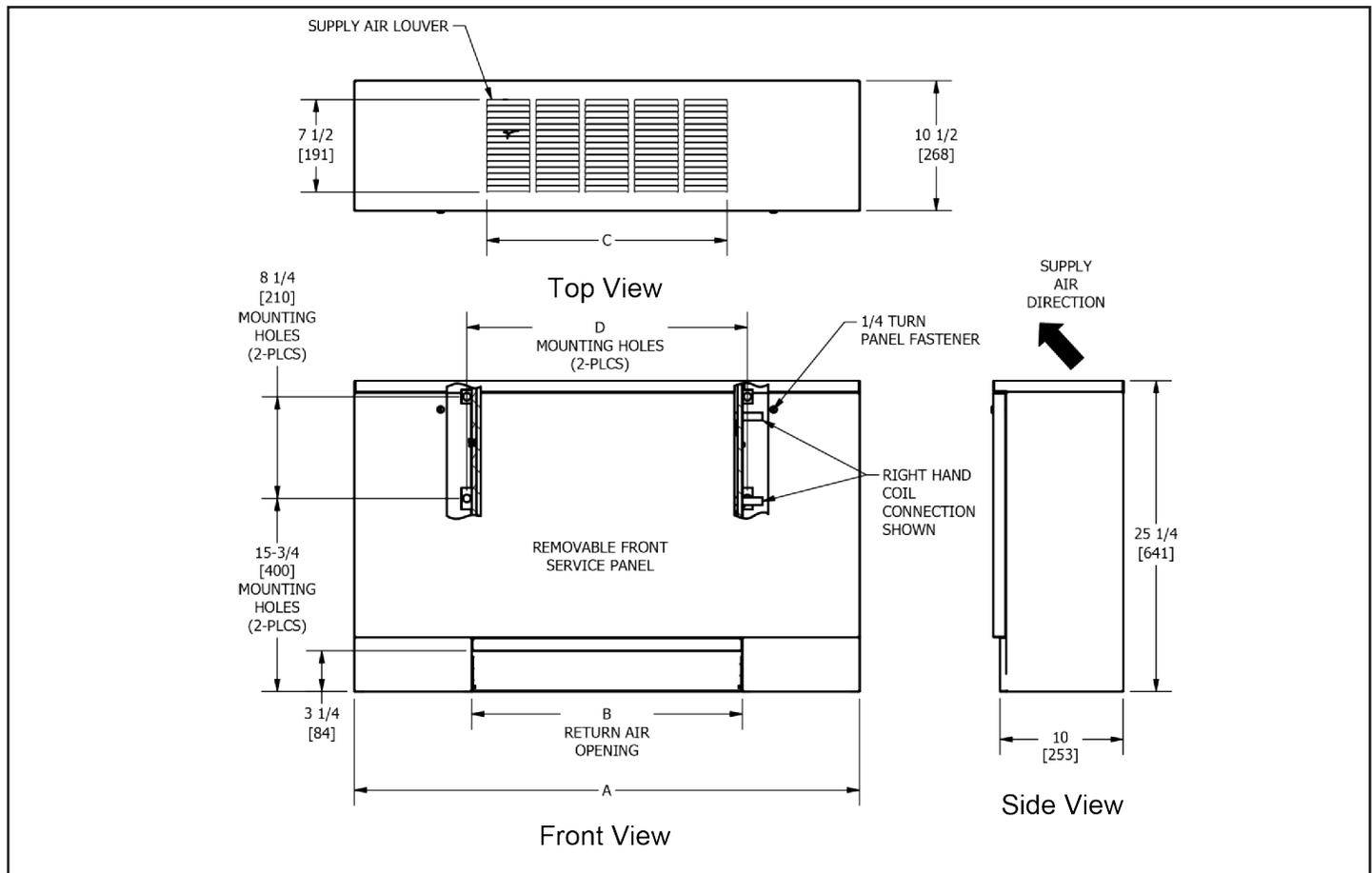
Dimensions			
Unit Size	A	B	C
02	23 3/16 [589]	23 3/4 [578]	16 [406]
03	27 3/16 [691]	26 3/4 [679]	20 [508]
04	33 3/16 [843]	32 3/4 [832]	26 [660]
06	43 3/16 [1097]	42 3/4 [1086]	36 [914]
08	45 3/16 [1148]	44 3/4 [1137]	38 [965]
10	59 3/16 [1503]	58 3/4 [1492]	52 [1320]
12	67 3/16 [1707]	66 3/4 [1695]	60 [1524]

Notes:

1. All dimensions are in inches [millimeters]. All dimensions are $\pm 1/4"$ [6mm]. Metric values are soft conversion.
2. Junction box size and location varies w/unit features. Control options may be limited. Provide sufficient clearance to access electrical controls and comply w/applicable codes and ordinances. Reduced height control enclosure is standard with opposite end coils.
3. Right hand coil connection shown. Left hand unit similar but opposite.
4. Some piping package options may require extended drain pans
5. Size 02 and 03 Models with 208/230vac or 277vac have 3 5/8" [92] extended controls enclosure

Dimensional Data: RBV Series

Model RBVC Vertical Flat Top Cabinet



Unit Size	Dimensions			
	A	B	C	D
02	40 [1016]	22 [559]	19 1/2 [495]	22 3/4 [578]
03	44 [1117]	26 [660]	23 1/2 [597]	26 3/4 [679]
04	50 [1270]	32 [813]	27 1/2 [699]	32 3/4 [832]
06	60 [1524]	42 [1067]	39 1/2 [1003]	42 3/4 [1086]
08	62 [1574]	44 [1118]	39 1/2 [1003]	44 3/4 [1137]
10	76 [1930]	58 [1473]	55 1/2 [1410]	58 3/4 [1492]
12	84 [2133]	66 [1676]	63 1/2 [1613]	66 3/4 [1695]

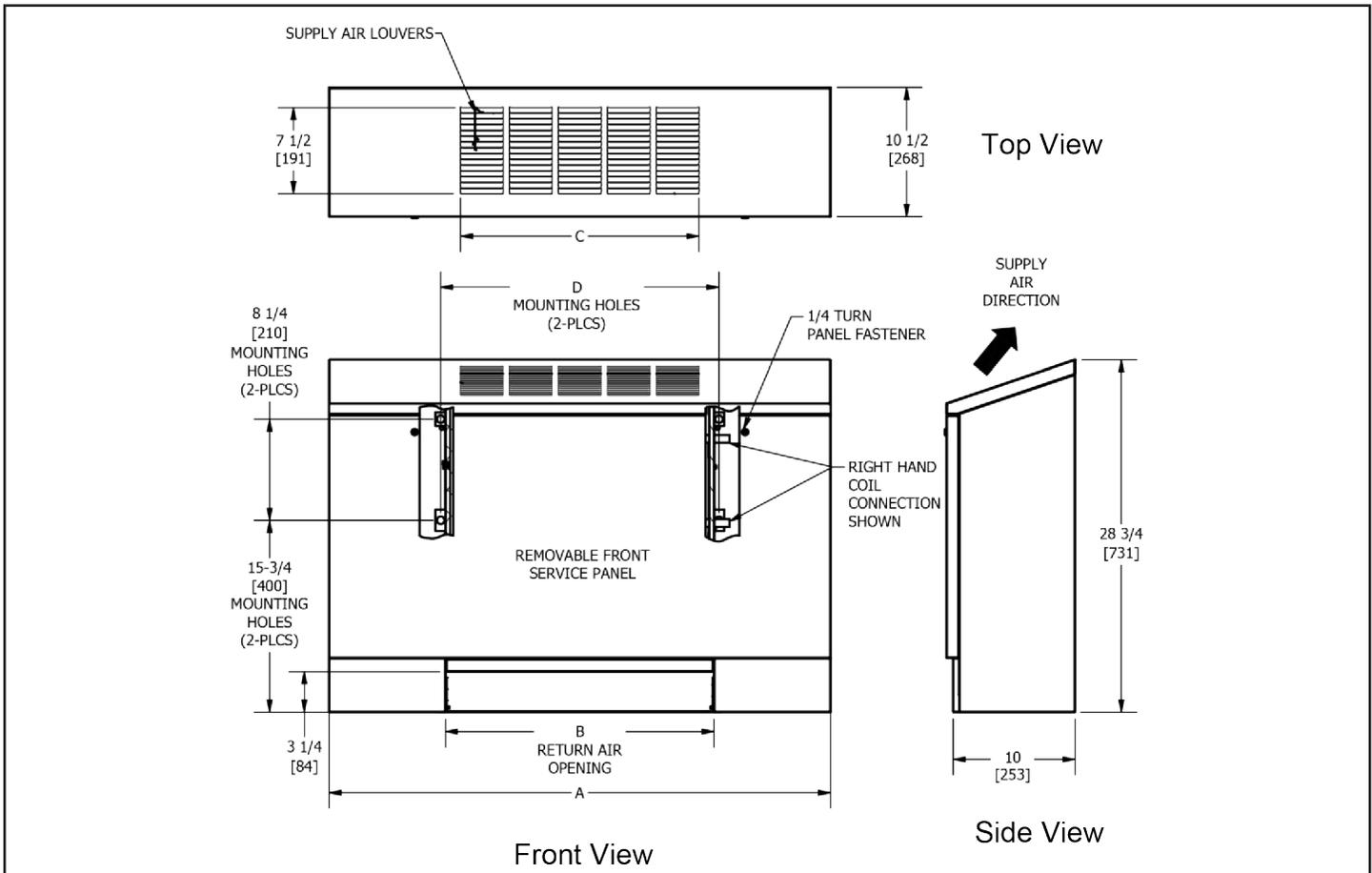
Notes:

1. All dimensions are Inches [millimeters]. All dimensions $\pm 1/4"$ [6mm]. Metric values are soft conversion.
2. Junction box size and location varies with unit features Control options may be limited. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances.
3. Standard cabinet finish is "British White Textured"
4. Parametric design available to increase Height or Width (See parametric offerings drawing)
5. Some control or piping package options may require extended end pockets and/or extended drain pans. (See extended end pocket drawing).
6. False backs ship loose for field installation

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Dimensional Data: RBV Series

Model RBVS Vertical Slant Top Cabinet



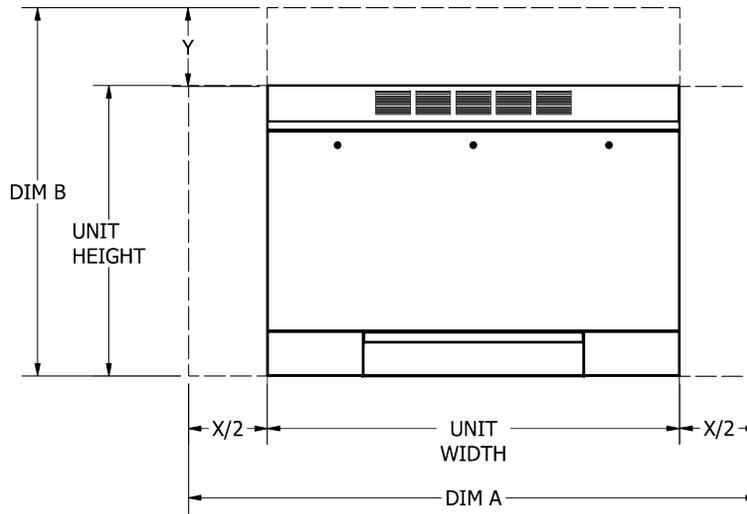
Unit Size	Dimensions			
	A	B	C	D
02	40 [1016]	22 [559]	19 1/2 [495]	22 3/4 [578]
03	44 [1117]	26 [660]	23 1/2 [597]	26 3/4 [679]
04	50 [1270]	32 [813]	27 1/2 [699]	32 3/4 [832]
06	60 [1524]	42 [1067]	39 1/2 [1003]	42 3/4 [1086]
08	62 [1574]	44 [1118]	39 1/2 [1003]	44 3/4 [1137]
10	76 [1930]	58 [1473]	55 1/2 [1410]	58 3/4 [1492]
12	84 [2133]	66 [1676]	63 1/2 [1613]	66 3/4 [1695]

Notes:

1. All dimensions are Inches [millimeters]. All dimensions $\pm 1/4$ " [6mm]. Metric values are soft conversion.
2. Junction box size and location varies with unit features. Control options may be limited. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances.
3. Standard cabinet finish is "British White Textured"
4. Right hand unit shown, left hand unit similar, but opposite
5. Parametric design available to increase Height or Width (See parametric offerings drawing)
6. Some control or piping package options may require extended pockets and/or extended drain pans. (See extended end pocket drawing).
7. False back extension available

Dimensional Data: RBV Series

Model RBVS Parametric Increments



Dimension A (inches)													
Size	X=0	X=1	X=2	X=3	X=4	X=5	X=6	X=7	X=8	X=9	X=10	X=11	X=12
02	40	-	42	43	44	45	46	47	48	49	50	51	52
03	44	-	46	47	48	49	50	51	52	53	54	55	56
04	50	-	52	53	54	55	56	57	58	59	60	61	62
06	60	-	62	63	64	65	66	67	68	69	70	71	72
08	62	-	64	65	66	67	68	69	70	71	72	73	74
10	76	-	78	79	80	81	82	83	84	85	86	87	88
12	84	-	86	87	88	89	90	91	92	93	94	N/A	N/A

Dimension B (inches)													
All Sizes	Y=0	Y=1	Y=2	Y=3	Y=4	Y=5	Y=6	Y=7	Y=8	Y=9	Y=10	Y=11	Y=12
	25 ¼	26 ¼	27 ¼	28 ¼	29 ¼	30 ¼	31 ¼	32 ¼	33 ¼	34 ¼	35 ¼	36 ¼	37 ¼

Dimension A (millimeters)													
Size	X=0	X=25	X=51	X=76	X=102	X=127	X=152	X=178	X=203	X=229	X=254	X=279	X=305
02	1016	-	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028
03	1116	-	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130
04	1270	-	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282
06	1524	-	1526	1527	1528	1529	1530	1531	1532	1533	1534	1535	1536
08	1575	-	1577	1578	1579	1580	1581	1582	1583	1584	1585	1586	1587
10	1930	-	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
12	2134	-	2136	2137	2138	2139	2140	2141	2142	2143	2144	N/A	N/A

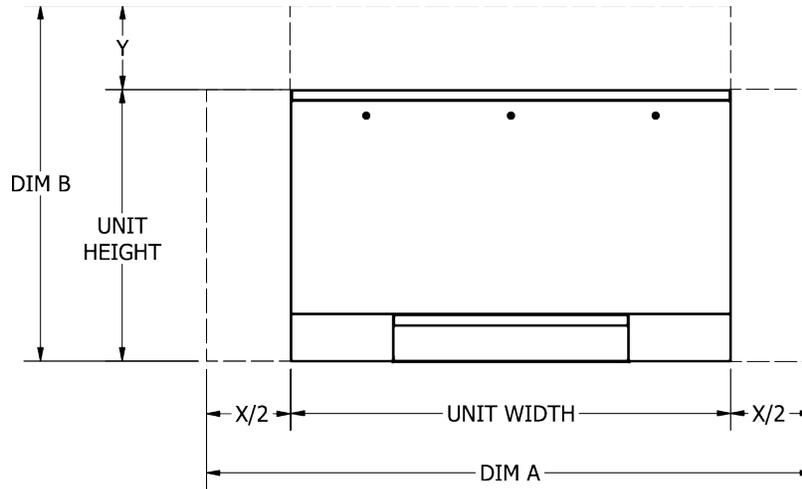
Dimension B (millimeters)													
All Sizes	Y=0	Y=20	Y=51	Y=76	Y=102	Y=127	Y=152	Y=178	Y=203	Y=229	Y=254	Y=279	Y=305
	641	667	692	718	743	768	794	819	845	870	895	921	946

Note: Internal chassis and air openings remain the same. External cabinet can increase in height and width in 1" (25.4mm) increments up to 12" (305mm).

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Dimensional Data: RBV Series

Model RBVC Parametric Increments



Dimension A (inches)													
Size	X=0	X=1	X=2	X=3	X=4	X=5	X=6	X=7	X=8	X=9	X=10	X=11	X=12
02	40	-	42	43	44	45	46	47	48	49	50	51	52
03	44	-	46	47	48	49	50	51	52	53	54	55	56
04	50	-	52	53	54	55	56	57	58	59	60	61	62
06	60	-	62	63	64	65	66	67	68	69	70	71	72
08	62	-	64	65	66	67	68	69	70	71	72	73	74
10	76	-	78	79	80	81	82	83	84	85	86	87	88
12	84	-	86	87	88	89	90	91	92	93	94	N/A	N/A

Dimension B (inches)													
All Sizes	Y=0	Y=1	Y=2	Y=3	Y=4	Y=5	Y=6	Y=7	Y=8	Y=9	Y=10	Y=11	Y=12
	25 ¼	26 ¼	27 ¼	28 ¼	29 ¼	30 ¼	31 ¼	32 ¼	33 ¼	34 ¼	35 ¼	36 ¼	37 ¼

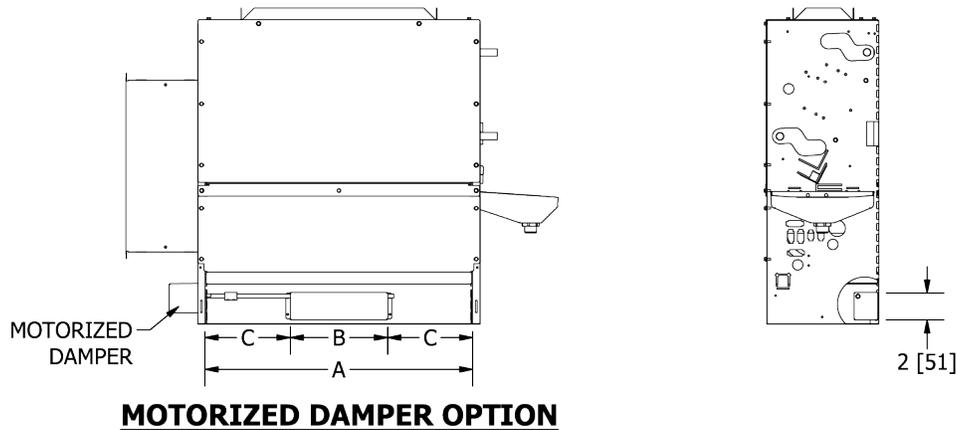
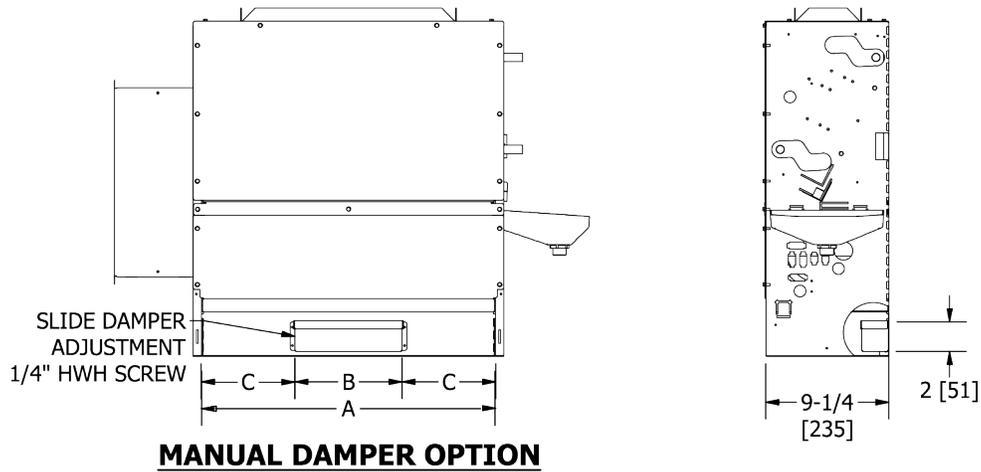
Dimension A (millimeters)													
Size	X=0	X=25	X=51	X=76	X=102	X=127	X=152	X=178	X=203	X=229	X=254	X=279	X=305
02	1016	-	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028
03	1116	-	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130
04	1270	-	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282
06	1524	-	1526	1527	1528	1529	1530	1531	1532	1533	1534	1535	1536
08	1575	-	1577	1578	1579	1580	1581	1582	1583	1584	1585	1586	1587
10	1930	-	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
12	2134	-	2136	2137	2138	2139	2140	2141	2142	2143	2144	N/A	N/A

Dimension B (millimeters)													
All Sizes	Y=0	Y=20	Y=51	Y=76	Y=102	Y=127	Y=152	Y=178	Y=203	Y=229	Y=254	Y=279	Y=305
	641	667	692	718	743	768	794	819	845	870	895	921	946

Note:
Internal chassis and air openings remain the same. External cabinet can increase in height and width in 1" (25.4mm) increments up to 12" (305mm).

Dimensional Data: RBV Series

Outside Air Damper



Unit Size	Dimensions		
	A	B	C
02	22 [559]	8 [203]	7 [178]
03	26 [660]	10 [254]	8 [203]
04	32 [813]	12 [305]	10 [254]
06	42 [1067]	14 [356]	14 [356]
08	44 [1118]	18 [457]	13 [330]
10	58 [1473]	27 [686]	15 ½ [394]
12	66 [1676]	27 [686]	19 ½ [495]

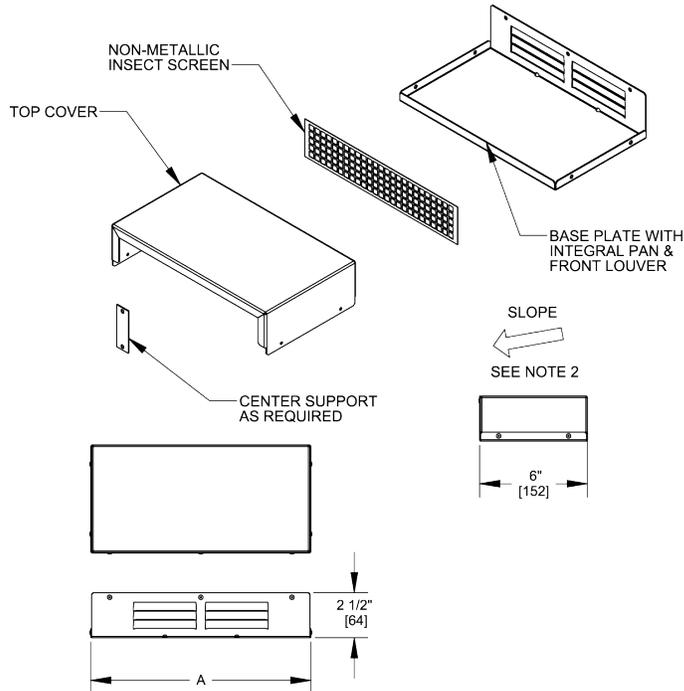
Notes:

1. All dimensions are inches [millimeters]. All dimensions are $\pm 1/4"$ [6mm]. Metric values are soft conversion.
2. Model RBVR shown; typical for Models RBVC and RBVS
3. The standard damper options may not provide freeze protection under all conditions and applications. Other forms of freeze protection may be required
4. Right hand unit shown; left hand unit is similar but opposite

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Dimensional Data: RBV Series

Wall Box

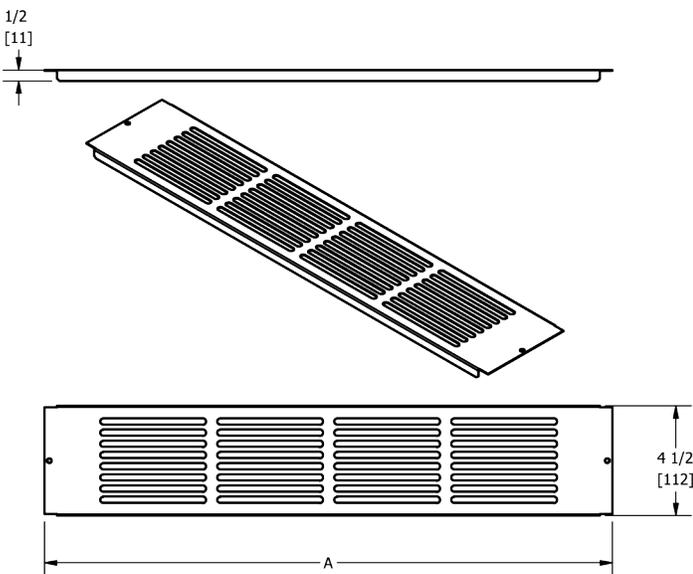


Dimensions	
Unit Size	A
02	8 ¼ [203]
03	10 ¼ [260]
04	12 ¼ [311]
06	14 ¼ [362]
08	18 ¼ [464]
10	27 ¼ [692]
12	27 ¼ [692]

Notes:

1. Material is .050" aluminum
2. Wall box should be installed pitched slightly toward exterior surface of wall
3. "Weep" holes should not be obstructed when sealing box to the wall

Return Air Toe Kick



Part Number	Unit Size	Dim A
51-00437-01	02	22 ¾ [578]
51-00437-02	03	26 ¾ [679]
51-00437-03	04	32 ¾ [832]
51-00437-04	06	42 ¾ [1086]
51-00437-05	08	44 ¾ [1137]
51-00437-06	10	58 ¾ [1492]
51-00437-07	12	66 ¾ [1695]

Notes:

1. All dimensions are inches [millimeters]. All dimensions are ± ¼" [6mm]. Metric values are soft conversion.
2. Typical for RBVC or RBVS models
3. Return grille is held in place with sheet metal screws

Piping Packages

All the packages and components described in this brochure are optional, extra cost features. Consult your Superior Rex sales representative for details. Not all components are available on all unit models. See valve package code charts.

All standard valve packages and piping components described in this catalog are for chilled and hot water applications. They may also be used with ethylene and propylene glycol solutions up to 50% concentration.

RBV fan coil unit packages are factory assembled and shipped loose for field installation and wiring.

RBV unit valve packages are designed to mount directly onto the coil connections.

Control valve actuators are removable, and may be serviced or replaced without removal of the valve body.

Control valves are piped normally closed to the coil. Control valves are available normally open.

3-Way control valves are piped as mixing valves.

All ball isolation valves are furnished with an adjustable memory stop feature and may be used as a balancing valve.

Optional unions are installed at the water coil, and are available on VAV products, and all fan coil units except VH. Unions must be ordered on both coils of 4-pipe units. Unions are not available separately.

Pressure/temperature (P/T) ports are located to monitor the pressure and temperature across the coil.

Automatic fixed flow controls (FC, FCN, FCS) are available in flo (GPM) ratings as follows:

1/2"	Flow Rating	Increment
	0.5 - 4.0 GPM	0.5 GPM
>4.0 - 6.0 GPM	1.0 GPM	

Individual coil GPM requirements must be specific at time of order. FC = 2-8 psig AFS.

Control Device Legend

MANUAL BALL VALVE WITH MEMORY STOP (BVMMS)		2-WAY CONTROL VALVE		3-WAY CONTROL VALVE	
FIXED FLOW CONTROL VALVE (FC)		AUTOMATIC CARTRIDGE FLOW CONTROL WITHOUT SCREEN (FCN)		AUTOMATIC CARTRIDGE FLOW CONTROL WITH SCREEN (FCS)	
ADJUSTABLE FLOW CIRCUIT SETTER (AFS)		BYPASS BALANCE VALVE (BPV)		PRESSURE-TEMPERATURE TEST PORT (PT)	
Y-STRAINER (Y-STR)		Y-STRAINER W/CLEANOUT VALVE (YCO)		UNION	
FLEXIBLE HOSE (FH)		AQUA-THERMOSTAT		SCHRADER FITTING	



Valve and component performance ratings shown are maximum values. Appearance and actual ratings may vary with component size.

Adjustable flow setter (AFS) is rated for full shut-off and replaces the return line ball isolation valve on all products except the VH fan coil unit.

2-Pipe “change-over” units using a 2-way control valve and factory thermostat must be ordered with a 1/4” “bleed” line to assure proper changeover thermostat (aquastat) operation. The 1/4” “bleed” line is optional on 2-pipe “changeover” units with field provided thermostats.

Some piping packages may require extended end pocket with extended auxiliary drain pan. Requirements for field furnished and installed valve

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Piping Packages

package and piping insulation must be determined by others on an individual application basis.

Actuators supplied with factory mounted piping packages include color coded plug and play connections with insulated wire to connect to relay board.

The valve package piping and component details shown in this catalog are for standard valves and components. The suitability of all valve packages and components must be determined by others based on individual application requirements. Superior Rex assumes no responsibility for selection and/or application of valve packages and components.

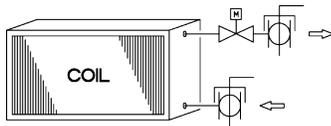
Modulating cooling valve control can increase part load space relative humidity. Superior Rex does not encourage or endorse modulating valve control for fan coil cooling systems, and is not liable for high humidity problems that may result. Modulating heating valve control may result in low leaving air temperatures while the valve reduces flow and as setpoint is approached.

Contact the factory for any requirements not shown in this catalog.

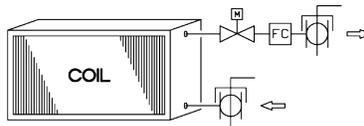


Piping Packages

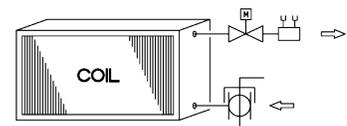
2-Way Piping Package												
Package Code	Components			Valve Size			Unions			P/t Ports	¼ bleed line	y-st R w/ bDv
	BVMS	FC	AFS	½"	¾"	1"	½"	¾"	1"			
24	X									X	X	X
25	X	X		X	X	X	X	X	X	X	X	X
29	X		X							X	X	X



Code 24
2-Way Control Valve and Ball Valves With Memory Stop

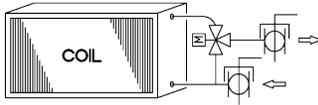


Code 25
2-Way Control Valve, Ball Valves with Memory Stop, and Fixed Flow Control

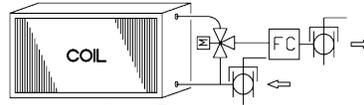


Code 29
2-Way Control Valve, Ball Valve with Memory Stop, and Adjustable Flow Setter

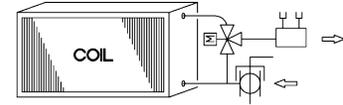
3-Way Piping Package											
Package Code	Components			Valve Size			Unions			P/t Ports	y-st R w/ bDv
	BVMS	FC	AFS	½"	¾"	1"	½"	¾"	1"		
36	X									X	X
37	X	X		X	X	X	X	X	X	X	X
41	X		X							X	X



Code 36
3-Way Control Valve and Ball Valves With Memory Stop

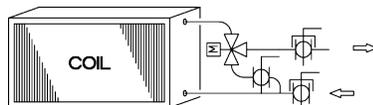


Code 37
3-Way Control Valve, Ball Valves with Memory Stop, and Fixed Flow Control

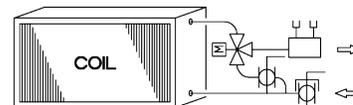


Code 41
3-Way Control Valve, Ball Valve With Memory Stop, and Adjustable Flow Setter

3-Way Package With Balance Bypass Valve											
Package Code	Components			Valve Size			Unions			P/t Ports	
	BVMS	FC	AFS	½"	¾"	1"	½"	¾"	1"		
50	X									X	
53	X		X	X	X	X	X	X	X	X	



Code 50
3-Way Control Valve, Ball Valve in Bypass, and Ball Valves With Memory Stop



Code 53
3-Way Control Valve, Ball Valve in Bypass, Ball Valve With Memory Stop, and Adjustable Flow Setter

Legend Component Pressure Ratings

BVMS: Manual Ball Valves w/Memory Stop, 600 PSIG
 FC: Fixed Flow Control, 500 PSIG
 AFS Adjustable Flow Circuit Setter, 300 PSIG
 P/T Port: Pressure/Temperature Test Port, 400 PSIG
 Union: 125 PSIG (contact factory for 600 PSIG)
 Control Valve: 300 PSIG
 BPV: Balance Bypass Valve, 400 PSIG
 Y-STR: Y-Strainer
 BDV: Blow Down Valve
 --- : Bleed line

Notes:

1. All drawings subject to change without prior notice
2. Diagrams show component position in relation to fluid flow. Actual valve package configuration varies with unit type, hand connection, pipe size and options.
3. ¼" bleed line is required on 2-pipe cool and heat auto changeover systems with factory provided thermostats; optional for thermostats by others
4. Unions provided as standard on all RBV piping packages

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Piping Packages

Piping System Component Maximum Working Pressure (Psig)

System Working Pressure (PSIG)	Water and Steam Coil		Ball Valves	Motorized Control Valve		Flow Control				1/4" Schraeder Valve	Pressure / Temp. Test Port	Flexible Hose Kit	Y-Strainer		Unions		
	coil	air vent		2 Position	Modulating	Automatic		Adjustable					Body	Clean-out			
		Manual				Auto	Fixed	Cartridge	Circuit Setter							Balance Valve	
100	250 @200°F, 15 PSIG Steam	400 @200°F	150 @240°F	600 @200°F	(40)	(50)	500 @225°F	230 @250°F	300 @400°F	400 @200°F	400 @250°F	400 @250°F	375 @250°F	400 @150°F	400 @200°F	500 @200°F	
200					300 @200°F	300 @200°F											400 @250°F
300																	
400																	
500																	
600																	

Notes:

1. All valves use sweat connections. 2 position valves are N.C. spring return; modulating valves are floating point non-spring return fail in place
2. Valve close off pressure is rated at powered operating mode
3. Cartridge type flow control devices utilize a replaceable flow compensation cartridge to adjust desired flow rate
4. Contact factory for unions rated at 600 PSIG and 325°F
5. Pressure ratings will be reduced as temperatures exceed those shown above
6. Maximum allowable system pressure is limited to the components selected with the lowest working pressure
7. Superior Rex assumes no responsibility for misapplication and selection of piping components
8. (XX) = Valve close off pressure

Piping Packages



Manual Ball Valve w/Memory Stop (BV MS)

An adjustable stop position lever to limit travel of the On/Off handle. This allows the ball valve to be closed, and returned to the balance setting position without re-testing the system. 1/2" size shown.

Nominal Size:	1/2"	3/4"	1"
Body Material:	Brass	Brass	Brass
Ball:	Hard Chrome Plated	Hard Chrome Plated	Hard Chrome Plated
Seats:	Teflon	Teflon	Teflon
Stem Seal:	(2) Viton O-Rings	Teflon	Teflon
Connection:	Sweat	Sweat	Sweat
Pressure Rating (psig):	600	600	600
Temp. Rating, °F:	325	325	325
Cv:	17	32	27



Flexible Hose Kits, 18" (FH)

Materials: EPDM inner lined, KeFLar® reinforced hose with stainless steel outer covering

Flow Rates:	0.5 to 12.0 GPM, based on application
Pressure Temp. Rating:	375 PSIG @ 250°F (450 PSIG test pressure)
Minimum Burst Pressure:	1500 PSI
Flame Spread:	Not greater than 25 per UL 723
Smoke Development:	Not greater than 50 per UL 723
Ball Valve w/Memory Stop:	Full port brass
Ball:	Stainless steel
Seats:	Teflon
Stem Seal:	(2) Viton O-Rings
Pressure Rating:	600 PSIG WOG
Temperature Rating:	325°F
Cv:	20
Available in 1/2" size only	



Typical 2-Way, 2-Position Control Valve

A 2-position water control valve driven open with spring return upon a call for heating or cooling to maintain space temperature. In open position, water can flow through the unit's water coil to heat or cool the space depending on supply water temperature. In closed position, water cannot flow through the water coil. Control valves are piped normally closed to the coil as standard. Valve actuators can be line or low (24VAC) voltage.

Nominal Size	1/2" 2-Way	3/4" 2-Way	1" 2-Way
Body Material:	Brass	Brass	Brass
Connection:	Sweat	Sweat	Sweat
Pressure Rating (psig):	300	300	300
Temperature Rating, °F:	200	200	200
Cv:	2.5	5.0	8.0
Maximum Close-off			
Pressure, Std. (PSIG):	40	20	17
High Close-off:	50	25	20
Power Consumption:	7VA	7VA	7VA

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Piping Packages



Typical 3-Way, 2-Position Control Valve

A 2-position water control valve driven open with spring return (bypass) upon a call for heating or cooling to maintain space temperature. Energized, the bypass port is blocked, and water can flow through the unit's water coil to heat or cool the space depending on the supply water temperature. De-energized, water cannot flow through the water coil but is forced to flow through the bypass port, bypassing the coil. Control valves are piped normally closed to the coil as standard (in full bypass). Valve actuators can be line or low (24VAC) voltage.

Nominal Size	½" 3-Way	¾" 3-Way	1" 3-Way
Body Material:	Brass	Brass	Brass
Connection:	Sweat	Sweat	Sweat
Pressure Rating (psig):	300	300	300
Temperature Rating, °F:	200	200	200
Cv:	3.0	5.0	8.0
Maximum Close-off Pressure (PSIG):	N/A	N/A	N/A
Power Consumption:	7VA	7VA	7VA



Typical 2-Way Modulating Control Valve

A 3-wire floating point, fail-in-place (non-spring return) modulating water control valve, driven open or closed upon a call for heating or cooling to maintain space temperature. In the open position, water can flow through the unit's water coil to heat or cool the space depending on supply water temperature. In the closed position, water cannot flow through the water coil. Factory furnished 2-way valve packages are piped normally closed to the water coil. The floating point control valve is compatible with any 24VAC three-wire signal when three minute time-out logic resides in the thermostat or system controller.

Nominal Size	½" 2-Way	¾" 2-Way	1" 2-Way
Body Material:	Brass	Brass	Brass
Connection:	Sweat	Sweat	Sweat
Pressure Rating (psig):	300	300	300
Temperature Rating, °F:	200	200	200
Cv:	2.0	4.0	8.0
Maximum Close-off Pressure			
Operating Mode:	50	35	35
Power Consumption:	1VA	1VA	1VA

Contact factory for 3-wire floating spring return applications.



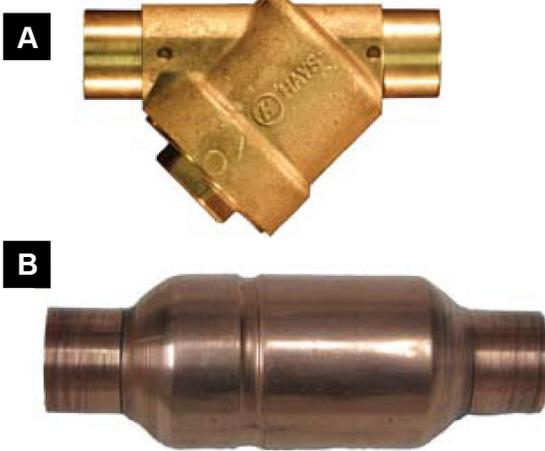
Typical 3-Way Modulating Control Valve

A 3-wire floating point, fail-in-place (non-spring return) modulating water control valve, driven open or closed (bypass) upon a call for heating or cooling to maintain space temperature. In the "open" position, the bypass port is closed and water is directed through the unit's water coil to heat or cool the space depending on supply water temperature. In the "closed" position, the service (water coil) port is closed and water is directed through the bypass port. Factory furnished 3-way valve packages are piped as "mixing" valves. The floating point control valve is compatible with any 24VAC three-wire signal when three minute time-out logic resides in the thermostat or system controller.

Nominal Size	½" 3-Way	¾" 3-Way	1" 3-Way
Body Material:	Brass	Brass	Brass
Connection:	Sweat	Sweat	Sweat
Pressure Rating (psig):	300	300	300
Temperature Rating, °F:	200	200	200
Cv:	2.0	4.0	8.0
Maximum Close-off Pressure			
Operating Mode:	N/A	N/A	N/A
Power Consumption:	1VA	1VA	1VA

Contact factory for 3-wire floating spring return applications.

Piping Packages



Automatic Fixed Flow Control (FC)

A pressure compensated automatic fixed flow control device designed to limit the flow GPM through the unit coil. Desired GPM must be specified when ordering. Device A shown is typical for controlling flow up to 8.0 GPM, and features a changeable flow cartridge. Device B is typical for flow above 8.0 GPM.

Nominal Size (A):	½" and ¾"
Nominal Size (B):	¾" and 1"
Body Material:	Copper
Connection:	Sweat
Pressure Rating (psig) (A):	600
Pressure Rating (psig) (B):	522
Temp. Rating, °F:	220
Cv:	Variable With Inlet Pressure



Automatic Cartridge Flow Control (FCN, FCS)

An automatic fixed flow control device with a replaceable stainless steel cartridge, and two pressure/temperature ports, designed to limit the flow GPM through the unit coil to ±5% of rated GPM. Desired GPM must be specified when ordering. Available with 20 mesh stainless steel screen.

½" size shown.

Nominal Size:	½", ¾", and 1"
Body Material:	Forged brass
Connection:	Sweat
Seals:	EPDM O-Rings
Pressure Rating (psig):	230
Temp. Rating, °F:	250
PSIG Range:	2 - 32
Optional Strainer:	
Body Material:	20 mesh stainless steel*

* The optional strainer is internal and does not affect the dimensions.



Adjustable Flow Circuit Setter (AFS)

A control device designed to allow maximum water flow through the unit coil in the Open (0%) position, and as little as 10% of flow through the unit coil in the Closed (90%) position. The device has a calibrated nameplate, built-in test ports and adjustable mechanical stops, and is suitable for positive shutoff.

Nominal Size:	½", ¾", and 1"
Body Material:	Bronze
Connection:	Sweat
Pressure Rating (psig):	300
Temp. Rating, °F:	250
Cv:	Variable

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Piping Packages



Balance Bypass Valve (BPV)

A plug type valve designed to balance the water flow through the bypass circuit of a 3-way control valve. Manual adjustment is required. No calibration is provided at the valve.

Nominal Size:	½", ¾", and 1"
Body Material:	Bronze
Connection:	Sweat
Pressure Rating (psig):	400
Temp. Rating, °F:	200
Cv:	Adjustable



Unions

A fitting used to provide a mechanical connection between the coil and valve package that can be connected, disconnected, and re-connected without the need to cut tubing or unsolder a joint. Unions are installed at the coil on HL, HP, and RBV fan coil units. Unions are not available on VH fan coil units.

Nominal Size:	½", ¾", and 1"
Body Material:	Bronze/Copper
Connection:	Sweat
Pressure Rating (psig):	500
Temp. Rating, °F:	200

*Contact factory for unions rated at 600 PSIG and 325°F.



Y-Strainer (Y-STR)

Designed to allow water to flow through a built in screen to filter debris or contaminants from the water system. With the water system isolated, the plug can be removed from the blow down leg of the strainer and the captured debris removed from the screen. After the plug is replaced, the system can be put back in operation and the strainer will continue to filter the unit's water.

Nominal Size:	½" and ¾"
Body Material:	Forged Brass
Connection:	Sweat
Pressure Rating (psig):	600
Temp. Rating, °F:	325
Screen:	20 Mesh Stainless Steel

Piping Packages



Blow Down Valve (BDV)

A standard ball valve installed on the strainer blow down leg to allow flushing the strainer screen without removing the plug in the blow down leg. This valve has a standard 1/2" garden hose connection to allow fluid to be piped to a container or remote location during cleaning. Not available separately.

Nominal Size:	1/2"
Body Material:	Bronze
Connection:	MPT
Pressure Rating (psig):	600
Temp. Rating, °F:	200



Optional Pressure/Temperature

Test Port Locations (P/T) Designed to allow testing of water pressure, differential pressure or water temperature without interrupting the waterside operation of the fan coil unit. Sensor probes (1/8") are not included.

Nominal Size:	1/4"
Body Material:	Brass
Connection:	MPT
Pressure Rating (psig):	400
Temp. Rating, °F:	250



Aqua Thermostat

The aqua thermostat, also called an automatic seasonal changeover switch or aquastat, is a switch designed to change a room thermostat from heating to cooling and back, based on the temperature of the water supplied to a 2-pipe unit to be used for both heating and cooling. The switch is shipped loose and is mounted in the field on the water tubing using the integral clip or spring.

Nominal Size:	1/2", 3/4" and 1"
Switch Action:	SPDT
	Switch on temperature rise, 85°F (± 6°F)
	Switch on temperature fall, 70°F (± 6°F)
Current Rating:	120VAC = 5.8 FLA/34.8 LRA (Inductive), 10.0 Amps (Resistive)
	208/240VAC = 2.9 FLA/17.4 LRA (Inductive), 2.0 Amps (Resistive)
	277VAC = 3.6 FLA/21.6 LRA (Inductive), 1.0 Amp (Resistive)

Agency Approval: UL Listed, CSA Approved Ratings may vary with vendor and size.

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GENERAL

Furnish and install Superior Rex Vertical Floor Direct Drive Fan Coil Units where indicated on the plans and in the specifications. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Units shall be ETL listed in compliance with UL/ANSI Standard 1995, and be certified as complying with AHRI Standard 440-2008.

CONSTRUCTION

All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125 hour salt spray test per ASTM B-117. All unit chassis panels shall be insulated with Elastomeric Closed Cell Foam Insulation. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21. Polyethylene or Fiberglass insulation is not acceptable.

All exposed units shall have exterior panels fabricated of not less than 20 gauge galvanized steel [Provide a 16 gauge front panel on exposed units]. The front panel shall be attached with quarter turn quick open fasteners to allow for easy removal and access for service. [The front panel shall be attached with tamper proof fasteners. Side panels shall be removable for access to controls and piping within the end pockets].

Top panel shall be removable from fan coil without the need to disconnect piping or electrical wiring (RBVC/RBVS). The top panel shall be removed through not more than 8 screws.

All exposed units shall include a recessed stamped louver discharge grille. Louver discharge grille shall be reverse stamped (RBVS only). [Provide an architectural grade linear bar discharge grille with a powder coated paint finish to match cabinet color. Liquid coat paint shall not be acceptable.]

All concealed units shall have a minimum 1" duct collar on the discharge.

PAINTED FINISH

All painted cabinet exterior panels shall be finished with a heat cured anodic acrylic powder paint of the standard factory color. Liquid coat paint shall not be acceptable.

SOUND

Units shall have published sound power level data tested in accordance with AHRI Standard 350.

POWER

Units shall not exceed scheduled power consumption.

FAN & MOTOR

Unit fan shall be dynamically balanced, forward curved, DWDI centrifugal type constructed of galvanized steel for corrosion resistance. Motors shall be high efficiency, permanently lubricated sleeve bearing, permanent split capacitor type with UL and CSA listed automatic reset thermal overload protection and three separate horsepower taps. Shaded pole motors are not acceptable. Single speed motors are not acceptable.

The fan/motor assembly shall be removable and serviceable through the front panel. Each fan/motor assembly shall be fastened by no more than 2 screws. The fan/ motor assembly shall be no longer than 44", and shall be easily removable by a single service technician. The motors shall have quick connectors to allow service and removal without the need for tools.

DRAIN PAN

Primary condensate drain pans shall be single wall, heavy gauge galvanized steel for corrosion resistance, and extend under the entire coil section. Drain pans shall be of one piece construction and be positively sloped for condensate removal. Drain pan access that requires removal of coils is not acceptable.

The primary drain pan shall be externally insulated with a fire retardant, elastomeric closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and an Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21. Double wall non-corrosive auxiliary drain pan is used for condensate from primary drain pan and optional valve packages.

Option: Provide a primary drain pan constructed entirely of heavy gauge stainless steel for superior corrosion resistance.

COILS

All cooling and heating coils shall optimize rows to meet the specified capacity. Coils shall have seamless copper tubes and shall be

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mechanically expanded to provide an efficient, permanent bond between the tube and fin. Minimum copper tube thickness shall be .016" [.025"].

Fins shall have high efficiency aluminum [copper] surface optimized for heat transfer, air pressure drop and carryover. Lanced fins shall not be acceptable. All coils shall be tested at 325 PSIG air pressure under water, and rated for a maximum 300 PSIG working pressure at 200°F. Coils shall be circuited for counter flow to maximize unit efficiency.

All water coils shall be designed to connect with ½" nominal pipe connections.

Coil Casing shall be fabricated from galvanized steel [stainless steel].

Heating coils shall be furnished in the pre-heat or re-heat position.

Direct expansion cooling coils shall be factory sealed and charged with minimum 25 PSIG nitrogen or refrigerated dry air.

All water coils shall be provided with a manual air vent fitting to allow for coil venting.

FILTERS

All units shall be furnished with a minimum 1" nominal glass fiber throwaway (1" pleated MERV 7) (1" pleated MERV 8) (1" pleated MERV 13) filter. Filters shall be tight fitting to prevent air bypass. Filters shall be easily removable from the return air opening without the need for tools (RBV Only).

ELECTRICAL

Units shall be furnished with single point power connection. Provide an electrical junction box for motor and other electrical terminations.

Option: Provide 24 VAC fan relay board with 25 VA transformer. Fan relay board designed to operate in conjunction with factory provided (field provided) 24 V thermostat. Fan relay board designed to accept 115, 208, 220, 230, or 277 V input power. Fan relay board to be factory installed.

Relay board shall operate with generic thermostat designed to control up to three independently energized fan speeds.

ELECTRIC HEAT

Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be rated for installation on the fan coil unit and be located so as not to expose the fan assembly to excessive leaving air temperatures that could affect motor performance. The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be ETL listed with the unit as an assembly in compliance with UL/ANSI Standard 1995.

All heating elements on floor mounted units shall be finned tubular type. Elements shall be constructed of nickel chromium resistance wire centered in tubes and embedded in refractory material. Terminals shall be sealed with silicone rubber to protect against moisture. Terminals and hardware shall be stainless steel for corrosion resistance. All internal wiring shall be rated for 105°C minimum.

All heaters shall include over temperature protection consisting of an automatic reset primary thermal limit and back-up secondary thermal limit. All heaters shall be single stage.

Option: Devices used to energize and de-energize (switch) electric heat must be totally silent. Magnetic, mercury, and/or quiet relays and/or contactors are not acceptable.

PIPING PACKAGES

Provide a standard factory assembled valve piping package to consist of a 2 or 3-way, on/off, motorized electric control valve and two ball isolation valves.

Control valves shall be piped normally closed to the coil. Control valves shall be wired to relay board through quick connects to allow service and replacement of valves. Quick connects shall prevent incorrect wiring through physical and color coded visual confirmation. Maximum entering water temperature on the control valve shall be 200°F, and maximum operating pressure shall be 300 PSIG.

Unions shall be provided to allow removal of piping package from unit without the need for brazing or cutting pipe.

Option: Provide 3-wire floating point modulating control valve (fail-in-place), in lieu of standard 2-position control valve with factory assembled valve piping package.

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Option: Provide high pressure close-off actuator for 2-way on/off control valve. Maximum close-off pressure is 50 PSIG ($\frac{1}{2}$ "), 25 PSIG ($\frac{3}{4}$ "), or 20 PSIG (1").

Option: Provide either a fixed or adjustable flow control device for each piping package.

Option: Provide pressure-temperature ports (P/T) for each piping package to allow measurement across the coil.

Piping packages shall be completely factory assembled, including interconnecting pipe and shipped loose for field installation.

Option: Piping package will be shipped factory installed.

Outside Air Damper

Provide a manual or two position motorized outside air damper integral to the unit.

Option: Provide aluminum outside air wall box with integral insect screen and weep holes for field installation.



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